



Barrett 960 HF Telephone Interconnect Operation Manual

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Introduction

The 960 HF Telephone interconnect is designed to provide users on a HF network full interconnection with the international telephone network. It is designed to be operated as a completely automatic facility with no requirement for human operator supervision. A high level of security is incorporated to eliminate system abuse.

This manual is divided into two sections, the first part of the manual gives a brief system overview and details the operation of the 960 telephone interconnect assuming the 960 has already been setup by a system supervisor. The second part of the manual details the 960 setup procedures.

System Overview

The 960 telephone interconnect will make your HF network stations extensions of the international telephone network.

The 960 telephone interconnect provides a fully automated interface between the international telephone network and a HF network. Stations in a HF network equipped with selective call systems based on CCIR 493 can call up to 98 numbers that can be stored in the 960 telephone interconnect. Stations fitted with a "Telcall" facility, based on selective call format CCIR 493, can direct dial any telephone number on the international telephone network. Telephone subscribers can dial into the 960 telephone interconnect from anywhere on the international telephone network and call any station on the HF network.

The Barrett 960 telephone interconnect provides full network management facilities including multiple telephone access levels for HF stations, call logging and remote supervision by dial up computer links

Operation

After switching on, the 960 performs a series of internal checks and displays important system information on the front panel display. If Levels 2 or 3 are fitted, additional information is sent to the printer.

Automatic mode overview

In automatic mode the 960 HF telephone interconnect will:-

Scan all channels programmed for scan looking for an incoming Selcall or Telcall from a HF network station.

On receipt of a Selcall or Telcall, the 960 checks that the station calling is registered in the database and has the required access privilege programmed by the system supervisor, if so it then initiates a telephone call and connects the telephone party with the HF station.

Return to scan when the call is complete.

Answer an incoming telephone call, prompt the telephone caller with recorded instructions on how to select a channel and how to send a Selcall to connect to a user on the HF network.

Periodic beacons if selected, will be sent on all channels to help the user determine if a particular channel is suitable for communication at the required time. A beacon signal can also be requested from the transceiver being called to check if a particular channel is suitable for use at the required time.

In the case of Level 2 or Level 3 960's - log all calls from both the telephone network and the HF network, either sending the information to a local printer or in the case of a Level 3 960 storing the information internally, ready to be interrogated by an external PC, loaded with 960 online supervisory software. A standard MODEM is used to connect to the 960 via the telephone network.

Facilities available to the telephone user

A telephone subscriber using a DTMF telephone can access the following facilities provided by the 960 telephone interconnect. These facilities are available after the 960 has answered the call and played its recorded instruction messages. To make a call to a station on the HF network a channel must be selected and the Selcall number of the station required must be entered, after which the 960 will send the selcall and if successful an audible reply will be heard from the station being called. If this audible reply (revertive call) is not heard another channel should be selected and the call repeated.

Selecting a channel

The 960 can store up to 50 channels. These are selected as follows:-

Press the two digits, representing the channel number required, on the DTMF key pad of the phone being used. Valid channel numbers are from 01 to 50. Alternatively for channels 1 to 9 can be selected by pressing a single digit followed by the '#' key. i.e. 1# selects channel one. Once the second number is pressed, the request is processed and a stored voice will repeat back the channel number.

The second option is especially useful for telephone systems which have STD-bar limits placed upon them. These telephones usually have a system fitted which prohibits the first digit pressed from being a zero.

Note:- channel numbers must be two digits in length. e.g. Enter 03 or 3# instead of 3.

Note:- once channel entry commences HF receiver noise will disappear until the DTMF function being entered is complete. This lack of HF receiver noise identifies that you are still in the DTMF request sequence.

Sending a Beacon Request

A beacon request is used to test to see if a channel is "open" to a HF station you may wish to call later with a Selcall. A beacon request does not alert the HF station being called. After the beacon request is sent a confirmation tone (revertive call) will be heard from the HF station, the strength of this confirmation tone (revertive call) indicates the quality of the channel for communication. If no confirmation tone (revertive call) is heard try another channel.

A beacon request can be sent to any HF station that has an access level that allows it to receive Selcalls (access levels are set in the 960 by the system supervisor and are described in the setup section within this manual).

To send a beacon request, press the '*' (star) key on the telephone key pad.

If the '*' key is recognised the receiver noise will disappear. Some DTMF telephones do not send the '*' and '#' tones. This should be tested before the system is first used.

Then enter the 4 digit selcall ID of the transceiver you wish to contact using the telephone key pad. Press the '*' button to send the beacon request. The tones of the beacon request selcall being sent will now be heard.

To re-send the last sent beacon request, press '**' (star twice) on the telephone key pad.

Sending a Selcall

A selcall is used to call a HF station and alert the operator that you wish to commence communication with that station. After the selcall is sent a confirmation tone (revertive call) will be heard from the HF station indicating the station has received the call. If no confirmation tone (revertive call) is heard try another channel.

A selcall can be sent to any HF station that has an access level that allows it to receive Selcalls (access levels are set in the 960 by the system supervisor and are described in the setup section within this manual).

To send a Selcall, press the '*' key on the telephone key pad.

If the '*' key is recognised the receiver noise will disappear. Some DTMF telephones do not send the '*' and '#' tones. This should be tested before the system is first used.

Then enter the 4 digit Selcall of the transceiver you wish to contact followed by two '#' key presses (only one '#' press is necessary on Level 1 Interconnects). The tones of the selcall being sent will now be heard. Note: ID's 9900 to 9999 are reserved for ALE calls. See "Sending an ALE call".

If the entered ID does not have the access level to receive Selcalls then the 'Access Denied' pre-recorded message will be played and the Selcall not sent.

After the Selcall has been sent, if the transceiver with that Selcall ID is on channel, a confirmation tone (revertive tone) will be heard. The telephone user should then wait for the transceiver operator to make voice contact. If no voice contact is made, a telephone number to call back on can be sent to the HF station using the 'Sending a Telcall' procedure.

If no audible acknowledgment tones are heard, the transceiver may be on another channel, or switched off. To try to make contact on another channel, follow the 'Selecting a Channel' procedure, then repeat the 'Making a Selcall' procedure.

If you wish to send the same Selcall number again, press '**'.

Sending a Telcall

In the event that a transceiver responds to a Selcall, but no voice contact is established, indicating the operator is not available, a ring back telephone number can be sent to the HF station transceiver and stored in its memory. On the HF station operators return he can return the call. This facility is not available on Level 1 Interconnects

A Telcall can only be made to a HF station that has an access level required for direct dialling on the PSTN.

To send a Telcall:-

Press '*' followed by the 4 digit Selcall number, then press '#'.

Enter the desired telephone number (up to 16 digits long) and then press '#' again.

The Telcall will then be sent and the telephone number will be stored in the HF station transceivers "Selcall history".

An audible acknowledgment will be heard if the call was successful.

If the HF station does not have the access level required for this operation the 'Access Denied' pre-recorded message will be heard and no action will be taken.

Using the Voice Operated Switch (VOX)

The transceiver being operated by the Barrett 960 telephone interconnect is usually switched between transmit and receive using the telephone subscribers voice to derive the switching signal. This is achieved using a specialised VOX (voice operated switch). If however the telephone is of bad quality then a manual method to switch between transmit and receive is available. To switch to the manual method press "88" on the telephone keypad. The internal synthesised voice will announce "OFF" indicating automatic VOX is off and you are now in a "manual VOX mode". In the manual mode to key the transceiver into transmit press the "#" key on the telephone keypad. When you finish talking again press the "#" key, the transceiver will now be in receive mode. i.e. using the "#" key on the telephone keypad is the similar to the microphone Press To Talk (PTT) button, except it only has to be pressed momentarily to switch between transmit and receive and visa versa.

To return to "automatic VOX mode" press "88" again on the telephone keypad, the internal synthesised voice will announce "ON" indicating automatic VOX is on again.

Requesting current channel information

The telephone subscriber can request the 960 to announce the current channel's number and frequency information using its internal synthesised voice by entering **77** on their telephone keypad.

Completing a call - "Hanging up"

There are two methods to complete a call or "Hang up":-.

The fastest and most efficient method is to enter **"99"** on the telephone keypad. This causes the 960 interconnect to instantly hang up. The telephone user then replaces the handset on his telephone. The 960 interconnect is now immediately ready for the next caller.

The second method is to simply hang up the telephone handset. The 960 cannot sometimes detect the telephone subscriber has "hung up" due to the way different telephone systems operate in different countries. The 960 in this case will either respond to a "BUSY" signal from the telephone system and then hang up or will time out due to lack of activity. Which ever is the case whilst the 960 is waiting to hang up, the system is not available for use and the last caller will be charged extra time on his call. Thus the first method is always preferable.

Sending an ALE call

If the optional ALE board is fitted, then an ALE call can be made to a HF transceiver also fitted with the optional ALE board.

To transmit an ALE call, press '*' (STAR) on the telephone keypad. If the '*' key is recognised the receiver noise will disappear. Enter the Destination ID number (up to 4 digits), followed by two '#' key presses.

Source and Destination ID's are allocated by the Interconnect operator.

Note: ID's 9900 and above are reserved for ALE calls.

Facilities available to the HF station

For more detailed information on how to call the interconnect using Barrett 530,550,930 and 950 transceivers refer to the relevant transceiver operation manuals.

Sending a beacon Request

To receive a beacon revertive from the 960 interconnect, send a Selcall to the ID xx99, where xx is the self ID of the interconnect. For example, Selcall 4599 will receive a beacon revertive from the interconnect with self ID of 45.

Sending a Selcall - dialling a preset phone number

To dial one of the interconnect preset phone numbers (0-98), send a Selcall to the interconnect with the preset number to dial. For example, Selcall 4501 will dial preset number 1, Selcall 4587 will dial preset number 87 etc, on a 960 interconnect with Self ID of 45.

The HF station sending the Selcall must have a relevant access level assigned to their selcall number to permit dialling to a preset phone number.

Sending a Telcall - dialling a telephone number

A 950 transceiver must be fitted with the telcall option to enable it to dial any desired telephone number via the 960. To make a telephone call, enter the self ID of the 960 to be used via the numeric key pad.

The SEL/TEL key is then pressed and then the wanted telephone number is entered. Finally, press the CHAN/SEND key. All of the information needed by the 960 to connect the transceiver to the required telephone number is sent to the 960 along with the selcall information.

Terminating a call

When a call has been completed, the caller must **hang up** by sending a "hang up" code to the 960. To do this, press the SEL/TEL key followed by the PROG/END key.

Sending an ALE call

ALE calls may be sent to Interconnects fitted with the ALE option. The transceiver must also be fitted with an ALE board.

Preset numbers are allocated by the Interconnect operator. Preset numbers are allocated according to which destination address is used.

Manual mode overview

In manual mode the 960 interconnect will act as a HF base station and :-

Enable the operator to send Selcalls to stations on the HF network.

Enable the operator to send Telcalls to stations on the HF network.

Receive incoming Selcalls from the HF network and manually forward the call to the pre-set telephone number within the 960 that is associated with selcall number received.

Receive incoming Telcalls from the HF network and forward these manually to the telephone network.

Note:- To operate the 960 in manual mode, the option 'Auto on Power up' should be set to 'Manual', in the 'Operational Menu' - refer to the setup section later in this manual.

Receiving a Selcall from a HF station

On receipt of a Selcall directed to your 960 , it will be displayed on the front panel and an alarm will sound.

To on-forward the call

To on-forward the call to the pre-set telephone, stored in your 960 and associated with the received selcall number, press the 'LEFT' key. The 960 will process the request, the telephone number will be dialled and the HF user will be connected to the telephone party.

To communicate by voice with the calling HF user

Press the 'RIGHT' key. This will cancel the audible alarm and allow conversation with the HF user to commence.

Receiving a Telcall from a HF station

On receipt of a Telcall directed to your 960 , it will be displayed on the front panel and an alarm will sound.

To on-forward the call

To on-forward the call to the telephone number, sent within Telcall by the HF station, press the 'LEFT' key. The 960 will process the request, the telephone number will be dialled and the HF user will be connected to the telephone party.

To communicate by voice with the calling HF user

Press the 'RIGHT' key. This will cancel the audible alarm and allow conversation with the HF user to commence.

Incoming phone calls

When the 960 is in 'Manual' mode, all incoming telephone calls are ignored. They are recognised but not answered.

A standard telephone should be connected in parallel to the 960, the call can then be manually answered by the operator. The operator can then Selcall the required HF station using the manual operator's control menu. Once contact is established, the telephone caller is connected to the HF station by selecting 'Place On Line' from the manual operator's control menu.

Completing the call - "Hanging up"

The HF user can send a "Hangup Request" for his transceiver (see the transceiver operation manual for details). When received by the 960 this will be displayed on the front panel, and pressing the 'LEFT' key will complete the hang up action by the 960. Any other key will abort this action.

From the telephone:-

The telephone user can request a "Hangup" by entering '99' on their DTMF telephone handsets. This will cause immediate call completion.

The telephone user can simply replace the phone to complete the call, the subsequent service tones from the telephone network will result in call completion. Note:- the service tones do not commence immediately the telephone receiver is replaced so extra time will be logged against the call using this method.

The 960 operator can select 'Place Off Line' from the manual operator's control menu.

Once a telephone call is complete, the Barrett 960 will revert to scan if scanning is selected as the system default.

Sending a Selcall to a HF station

Enter manual mode by pressing '0'. Enter the manual operator's control menu by pressing the 'LEFT' key while in 'Manual' mode. When making a Selcall, use the UP/DOWN keys to select 'Send Selcall'. Press the RIGHT key.

Manual Menu
Send Selcall



ID:0000
Send Selcall

5 6 7 8

ID:5678
Send Selcall

END

Sending 1234
Selcall

When making a Selcall, the most recent Selcall number becomes the default. If the same Selcall number is required, press the 'END' key. If a different Selcall number is required, directly enter it using the number keys.

When the Selcall number displayed is correct, press 'END' to send the call. Press 'CANCEL' at any time to exit without making the call.

Sending a Telcall to a HF station

Enter manual mode by pressing '0'. Enter the Manual Operator's Control Menu by pressing the 'LEFT' key while in 'Manual' mode. When making a Telcall, use the UP/DOWN keys to select 'Send Telcall'. Press the RIGHT key.

Manual Menu
Send Telcall



ID:0000
Send Telcall

1 2 3 4

ID:1234
Send Telcall

END

Enter Ph. Number

5 6 2 3 1 4 8 7

Enter Ph. Number
56231487_____

END

Sending 1234
Telcall

Enter the telephone number required by using the numeric keypad. To delete the previous phone number, repeatedly press the 'CANCEL' button, until there is no phone number. If a mistake is made press 'CANCEL' and try again. If a 16 digit number is entered, the number is dialed immediately after the 16th digit is entered. When the telephone number displayed is correct press 'END' to dial the number.

Making a telephone call

Enter the Manual Operator's Control Menu, as before. When making a telephone call, use the UP/DOWN keys to select 'Make Phonecall'. Press the RIGHT key.

Manual Menu
Make Phonecall



Enter Ph. Number

5 6 2 3 1 4 8 7

Enter Ph. Number
56231487-----

END

Dialling
56231487

When the telephone number displayed is correct press 'END' to dial the number. When the telephone is answered, use the front panel microphone to talk and the speaker to listen.

If a 16 digit number is entered, the number is dialled immediately after the 16th digit is entered. Press CANCEL at any time to exit without making the call.

Completing a telephone call

When placing the 960 On Line and Off Line, the current line status is always shown by the front panel LED's. The centre LED is the On Line indicator.

Manual Menu
Place Of-Line

To go offline manually, enter the Manual Operator's Control Menu, as before. Use the UP/DOWN keys to select 'Place Off-Line'. Press the RIGHT key

Sending a Beacon request to a HF station

Enter manual mode by pressing '0'. Enter the Manual Operator's Control Menu by pressing the 'LEFT' key while in 'Manual' mode. Use the UP/DOWN keys to select 'Send Beacon Rqst'. Press the RIGHT key.

Manual Menu
Send Beacon Rqst



ID:0000
Send Beacon Rqst

1

2

3

4

ID:1234
Send Beacon Rqst

END

Sending 1234
Beacon

When sending a Beacon, the most recent destination ID becomes the default. If the same destination ID is required, press the 'END' key. If a different destination ID is required, directly enter it using the number keys.

When the destination ID displayed is correct, press 'END' to send the call. Press 'CANCEL' at any time to exit without making the call.

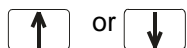
Sending an ALE Request/End

To send an ALE call or end call requires the optional ALE board. Enter the Manual Operator's Control Menu by pressing the 'LEFT' key while in 'Manual' mode. Use the UP/DOWN keys to select 'Send ALE Rqst' or 'Send ALE End'. Press the RIGHT key.

Manual Menu
Send ALE Rqst



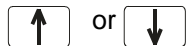
ALE Call To: 0
BASE



ALE Call To: 1
REMOTE



ALE Call From: 0
REMOTE



ALE Call From: 1
BASE

END

Sending ALE Call
Channel: 1

When sending an ALE request, select the destination address by pressing the 'UP' or 'DOWN' keys. The most recent destination address becomes the default. Destination addresses must be set in the MS-Windows ALE software, and downloaded to the ALE board on the 960 interconnect. (See ALE Configuration section of this manual.)

Press the LEFT/RIGHT arrow keys to move onto the source address field. The most recent source address becomes the default. Select the source address by pressing the 'UP' or 'DOWN' keys. To make a call press the 'END' key. To abort a call press the 'CANCEL' key.

To send an ALE end call, select the 'Send ALE End' menu option. The ALE must be already linked to send an ALE end call.

System Setup

Hardware

Front Panel

32 character (16 x 2 lines) backlit, liquid crystal display.

16 control keys for full operation and editing.

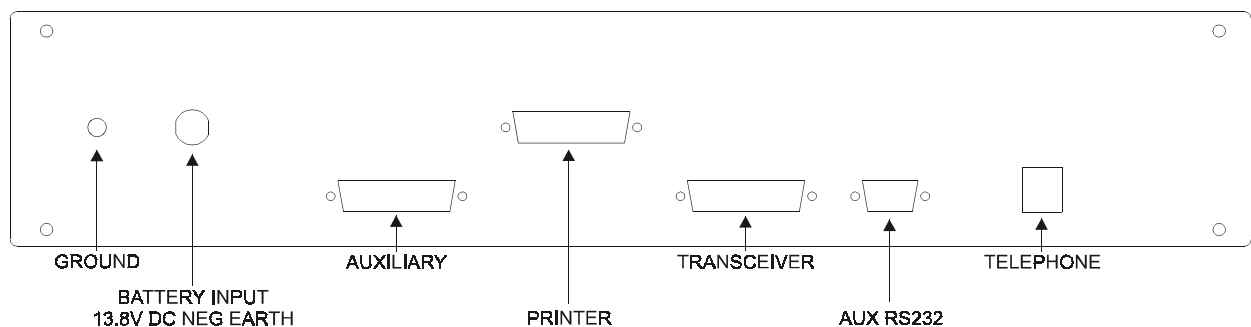
5 status LED's giving POWER, ALE, ON LINE, PTT and VOX indications.

Speaker giving full audio response and output power.

Volume control knob with POWER ON/OFF control.

International standard 8-pin microphone connector.

Handles, for easy removal from racking installations.



Rear Panel

Transceiver port for connection to a 950 transceiver. (25 pin 'D' female connector).

Auxiliary port 2 for connection to remote site systems etc. i.e. Barrett 974 system (25 pin "D" female connector)

Auxiliary serial port for configuring (filling) the optional ALE board (9 pin 'D' connector). Can also be used for logging / monitoring and direct programming.

Parallel printer port for connection to a tractor-feed dot matrix printer - for real time hard copy print out.

Power lead - suits 922 Power Supply

Telecom line socket (RJ12 type, 6P4C)

Ground Bonding Strap

System interconnection

Ensure that all components to be connected into the system are switched off:-

On the 960 interconnect ensure the ON/OFF Volume control is fully counter-clockwise.

On the 922 Power supply remove the IEC mains connector lead.

Connect the 25 way interface cable (cable Barrett connector P/N BCA90021) from the 950M transceiver 25 pin auxiliary connector to the 960 25 pin 950 transceiver connector.

Connect the 960's ground bonding strap to the transceiver and the 950 transceiver's ground bonding strap to the 922 power supply. It is very important that these bonding straps are correctly fitted or transmitter instability may occur.

Connect the supplied telephone cable to the 'Telephone' socket of the 960 and to the PSTN socket.

Connect the power leads to the 950M transceiver, and 960 interconnect from the 922 power supply. The 922 power supply has two outputs. Transceiver output and Aux output. Connect the Transceiver output to the 950 and the Aux output to the 960.

If a power supply other than the 922 is to be used, it must be capable of providing the 960 interconnect with +13.8V @ 2A and the 950M transceiver with +13.8V @ 20A.

Connect a suitable antenna to the 950 transceiver module.

Switch the 960 on by turning the volume control knob clockwise. A click will result and the 960 interconnect and 950M transceiver units will both be powered up. Further turning of this knob adjusts the volume of the front panel speaker.

Option levels

There are 3 different option levels of 960 Telephone interconnect available. These are only available factory fitted. These options can be upgraded, however this can only be done by returning the 960 to the Barrett factory. It is NOT possible for dealers to perform this upgrade.

The 3 option levels are:

Level 1 Preset telephone numbers only

This level gives no facility for direct dialling of telephone numbers. Only the 98 internal preset numbers can be used. No system activity information is available.

Level 2 Standard configuration

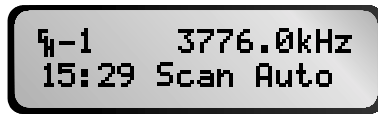
Full direct dialling facilities as well as preset telephone numbers are available. A complete log of system activity is available from the printer port.

Level 3 Full logging commercial option

Full direct dialling facilities as well as preset telephone numbers are available. A complete log of system activity is available from the printer port. Full reprogramming facilities from an external computer/terminal are available through the RS-232 port. Logging to a remote computer is available for complete remote site system management.

Primary screen functions

The primary screen is the normal operational screen of the 960 interconnect.



From the primary screen, the user can do several operations by using the front panel key pad. These are shown individually below, but are not intended to be a sequence of key presses.



... to enter the main menu



... to enter/exit manual mode.




... to enter the manual menu, while the interconnect is in manual mode.



... to enable/disable scan mode.




or  ... to scroll up and down through the channels. Interconnect must be out of scan.



... to enable/disable scan mute. Speaker is muted until the interconnect begins to detect a Selcall.



to  ... to change channels. (See below)




To change channels, press any one of the number keys except 0. The interconnect prompts the user to enter a 2 digit channel number, as above. Press the 'UP' and 'DOWN' keys to scroll up and down through the channels, or enter a 2 digit channel number using the number keys.


Note:- to enter a single digit channel number, press the zero key, followed by one of the digit keys, while the interconnect is prompting for a channel number, as above.

Setting parameters


Navigating the menus



The configuration of the interconnect is broken down into menus and sub-menus.


 ... to enter the main menu



 ... to enter the manual menu, while the interconnect is in manual mode. To enter manual mode, press '0'.


Use the following sequences to display or change parameters of items in the menu selection.


 ... to enter a sub-menu

 or  ... to go to a menu item

 ... to select a menu item

 or  ... to select a parameter value

 ... to save the parameter

 ... to exit without saving, or to exit out of the sub-menu

To access the "Main Menu" press the 'END' key when the interconnect is in it's idle state, or hold down the 'END' key when the interconnect is turned on. In manual mode, the 'LEFT' key selects the manual menu. Use the 'UP' and 'DOWN' arrow keys to scroll through the menu options and sub-menus. Press the 'RIGHT' key to select the current option or sub-menu. For more details see "Appendix - A, Primary Screen / Menu Key Functions".

Channels - setting

Factory Default: No programmed channels.

There are fifty programmable channels on the 960 interconnect, 1 to 50 respectively. Each channel can be programmed for receive and transmit frequencies, USB and LSB and whether the channel is scanned in scan mode.

Adding / editing a Channel



Select the "Program Channels" option from the "Txcvr Menu". Press 'END' to enter the main menu, then enter the "Txcvr Menu" by pressing the 'RIGHT' arrow key.



Use the 'UP' and 'DOWN' arrow keys to select the channel to edit. Press 'END' to select the channel.

4-1 3776.0kHz
Set RX Frequency

Using the number pad enter in the receive (Rx) frequency. If the first digit entered is greater than three ('3') then a leading zero ('0') will be inserted. For example 06850kHz. This is because RX and TX frequencies are between 1600kHz and 30MHz. Press 'END' to confirm the receive (Rx) frequency.

4-1 3776.0kHz
Set TX Frequency

Using the number pad enter in the transmit (Tx) frequency. If the first digit entered is greater than three ('3') then a leading zero ('0') will be inserted. For example 06850kHz. This is because RX and TX frequencies are between 1600kHz and 30MHz. Press 'END' to confirm the transmit (Tx) frequency.

4-1 [Usb]/Lsb
Channel Option

Use 'LEFT' and 'RIGHT' arrow keys to select "USB" (upper side band) or "LSB" (lower side band) will be used for this channel. Press 'END' to confirm the selection.

4-1 [Scan]/Off
Channel Option

Use 'LEFT' and 'RIGHT' arrow keys to select "Scan" or "Off". This channel will be scanned if "Scan" is selected and scan mode is enabled (See 'Selecting Channel Scan on Power-up', 'Enable / Disable Scanning of Channels')

4020

Press 'END' to save the channel. The transceiver will be programmed with the new channel. The next successive channel as shown above will be prompted to edit. If no more further channels require editing then press the 'CANCEL' key.

Deleting a channel

Txcvr Menu
Program Channels

Select the "Program Channels" option from the "Txcvr Menu".

4010

Use the 'UP' and 'DOWN' arrow keys to select the channel to edit. Press 'END' to select the channel.

4-1 0 . kHz
Set RX Frequency

Using the number pad, enter in zero ('0') for the receive (Rx) frequency. Press 'END' to confirm the receive frequency.

4-1 . kHz
Set TX Frequency

Press enter to accept zero ('0') as the transmit (Tx) frequency. Press 'END' to confirm the transmit (Tx) frequency.

4-1 [Usb]/Lsb
Channel Option

Select either "USB" or "LSB". Does not matter since this channel will not be used. Press 'END' to confirm.

4-1 [Scan]/Off
Channel Option

Select either "Scan" or "Off". Does not matter since this channel will not be used. Press 'END' to save empty channel. The transceiver will also be programmed with the empty channel.

402†

The next successive channel will be prompted to edit. If no more further channels require editing then press the 'CANCEL' key.

960 interface parameters

The 960 can control either a 950 transceiver or an ancillary device on the auxiliary interface connector. When controlling a 950 transceiver, the receive audio source the 960 uses can either be from the 950 transceiver or from a remote source, via the auxiliary connector, such as a remote receive site.

Selecting receiver audio source

Factory Default: 950

Selects the receiver audio source used within the 960 either from the 950 transceiver connected to the 950 port or from a remote source via the auxiliary connector i.e. when a remote receive site is being used.

Txcvr Menu
Txcvr Rx Audio

Select the "Txcvr Rx Audio" option from the "Txcvr Menu".


[950]/Aux
Txcvr Rx Audio

Use the 'LEFT' and 'RIGHT' arrow keys to select "950" or "Aux". Press 'END' to confirm selection.

Selecting 960 interface

Factory Default: 950

Selects which 960 interface is in use. The interconnect can communicate with a 950 transceiver or an ancillary device connected to the ancillary port such as a Barrett 974 integration system.



Txcvr Menu
Txcvr Type

Select the "Txcvr Type" option from the "Txcvr Menu".



[950]/Aux
Txcvr Type

Use 'LEFT' and 'RIGHT' arrow keys to select "950" or "Aux". Press 'END' to confirm selection.

Selecting Duplex Mode

Factory Default: Off

Selects duplex mode. This allows the transceiver user to talk and listen at the same time. Duplex mode requires two 950 transceivers, one for receive and one for transmit. The receiving transceiver is connected to the auxiliary port on the rear of the interconnect. The remote user also requires two transceivers, transmitting and receiving on different frequencies.



Txcvr Menu
Duplex Mode

Select "Duplex Mode" option from the "Txcvr Menu".



[Off]/On
Duplex Mode

Use 'LEFT' and 'RIGHT' arrow keys to select "On" or "Off". Press 'END' to confirm selection.


Phone dialling configuration

Preset phone numbers

Factory Default: No preset phone numbers.


The interconnect has the ability to store 98 preset phone numbers internally. These are dialled when a Selcall is received by the interconnect. For example, the interconnect has a self ID of 45, and a Selcall is sent from a mobile transceiver ID 1234 to the ID 4550. The interconnect will respond because 45 is its self ID and will dial the preset phone number 50 (xx50). Note the mobile ID 1234 must have appropriate access level to be able to dial out. (See 'Selcall Access Levels').

Adding / editing a preset phone number



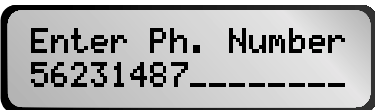
Dialing Menu
Preset Numbers

Select the "Preset Numbers" option from the "Dialling Menu".




01
Preset Numbers

Select the preset phone number to modify by using the 'UP' and 'DOWN' arrow keys to scroll between 0 and 98. Press 'END' to confirm which phone number to modify.



Enter Ph. Number
56231487


If the phone number already exists it will be displayed upon the bottom line otherwise the LCD cursor will be positioned at the first number. The 'CANCEL' button will delete the last entered character, or cancel the operation all together if the phone number is blank. Press 'END' to save the phone number.



02
Preset Numbers


Select the next preset number to modify and repeat the above. Press 'CANCEL' to finish changing preset numbers.

Deleting a preset phone number



Dialing Menu
Preset Numbers

Select the "Preset Numbers" option from the "Dialling Menu".



01
Preset Numbers

Select the preset phone number to delete by using the 'UP' and 'DOWN' arrow keys to scroll between 0 and 98. Press 'END' to confirm which number to delete.

Enter Ph. Number

If the phone number exists it will be displayed upon the bottom line. Use the 'CANCEL' button to delete each digit in the phone number. Once all the digits have been deleted press the 'END' key to save the empty phone number.

Selecting DTMF or pulse (Decadic) dialling

Factory Default: DTMF

This will set how all phone numbers are dialled to the phone exchange. Most new exchanges use DTMF since it is quicker. Decadic dialling should be used as a last resort.

Dialing Menu
Dialing Method

Select "Dialling Method" from the "Dialling Menu".

[DTMF]/Pulse
Dialling Method

Use the 'LEFT' and 'RIGHT' arrow keys to select "DTMF" or "Pulse". Press 'END' to confirm selection.

Enabling dial tone checking

Factory Default: Enabled, 3 seconds.

Dial tone checking looks for the absence of a valid free phone line before making a phone call. For example, someone may be using a normal telephone in parallel on the same line, therefore the interconnect is unable to use it.

Note: In some telephone exchanges, particularly older ones, the dial tone on the telephone line before dialling is different to the newer standards now used. In these cases dial tone checking has to be disabled.

Dialing Menu
Dial Tone Wait

Select "Dial Tone Wait" option from the "Dialling Menu".

03 Second(s)
Dial Tone Wait

Use the 'UP' and 'DOWN' arrow keys to select the time in seconds to wait for a dial tone. To disable dial tone checking select "00 Second(s)". The maximum time to wait for a dial tone is ten seconds. Press 'END' to save.

Setting DTMF tone duration

Factory Default: 70ms.



Dialling Menu
DTMF Tone Length

Select "DTMF Tone Length" option from the "Dialling Menu".



70 ms
DTMF Tone Length

Use the 'UP' and 'DOWN' arrow keys to select the time in milli -seconds (ms) a DTMF tone will be on for. Press 'END' to save.

Setting time to wait for someone to answer the phone

Factory Default: 50 seconds.

Sets the maximum time to wait for someone to answer the phone when dialling out, after receiving the first ring.



Dialling Menu
Wait For Answer

Select "Wait for Answer" option from the "Dialling Menu".



50 Second(s)
Wait For Answer

Use the 'UP' and 'DOWN' arrow keys to increase/decrease the value. Press 'END' to save.

Setting time to wait for first ring

Factory Default: 50 seconds.

Sets the maximum time to wait for a ring, after the interconnect dials out to the phone.



Dialling Menu
Wait For Ring

Select "Wait for Ring" option from the "Dialling Menu".



50 Second(s)
Wait For Ring

Use the 'UP' and 'DOWN' arrow keys to increase/decrease the value. Press 'END' to save.

Enabling line reversal off hook / on hook detection

Line reversal detection is a means of detecting when the phone is answered when an outgoing phone call from the 960 is made. To use "line reversal detection" the phone line the 960 is connected to must have this facility fitted. You should request this facility from your local Telecom company.

If line reversal is not available from your local Telecom company, then the 960 must be trained to recognise the 'ring' cadence. (See "Learning non-standard ring / busy / disconnect cadences").

Dialling Menu
Line Reversal

Select "Line Reversal" option from the "Dialling Menu".

[Yes]/No
Line Reversal

Use the 'LEFT' and 'RIGHT' arrow keys to select "Yes" or "No". Press 'END' to save.

Setting the number of rings before the 960 will auto-answer

Factory Default: 2 rings

In normal automatic operation the interconnect will answer the phone automatically. This option sets the number of phone rings before the phone is answered.

Dialling Menu
Ring Till Answer

Select "Ring Till Answer" option from the "Dialling Menu".

02
Ring Till Answer

Use the 'UP' and 'DOWN' arrow keys to select the number of rings before the interconnect will answer the phone. The minimum is one ring, the maximum is ten rings. Press 'END' to save.

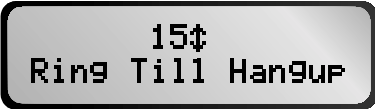
Setting the number of rings to determine "no one is home"

Factory Default: 10 rings

This option sets the number of rings the 960 will wait before determining the number the 960 has dialled is not going to answer.

Dialling Menu
Ring Till Hangup

Select "Ring Till Hangup" option from the "Dialling Menu".



15 \updownarrow
Ring Till Hangup

Use the 'UP' and 'DOWN' arrow keys to select the number of rings before the interconnect will hang-up the phone. The minimum is two rings, the maximum is fifteen rings. Press 'END' to save.

Setting the maximum call length

Factory Default: 30 minutes

The interconnect can restrict the length of phone calls so as to allow other people the use of the interconnect.



Dialling Menu
Call Length

Select "Call Length" option from the "Dialling Menu".



30 \updownarrow Minutes(s)
Call Length

Use the 'UP' and 'DOWN' arrow keys to select the longest possible call one can make in minutes. The minimum call length is one minute, the maximum call length is sixty minutes. To disable call length monitoring, set the call length to "00 Minute(s)". This allows unlimited call length. Press 'END' to save.

Dialling a prefix to obtain an external line

Factory Default: Off

This option dials a prefix before dialling an out-going phone number. This is used by some PABX systems to obtain an external line.



Dialling Menu
PABX Prefix

To enable, go to "PABX Prefix" in the "Dialling Menu".



[Off]/On
PABX Prefix

Press 'RIGHT' arrow key to select the option. Press 'LEFT' or 'RIGHT' arrow keys to select "On" or "Off". Press 'END' to save the setting, or press 'CANCEL' to abort without saving.

Setting PABX prefix number

Factory Default: "0"

This option set the prefix number to dial to obtain an external line in a PABX telephone network.



[Off]/On
PABX Prefix

Go to "PABX Prefix No" in the "Dialling Menu".

Enter Prefix

Press 'RIGHT' arrow key to select the option. Press 'CANCEL' to delete the current PABX prefix. Enter a new prefix using the number keys. Press 'END' to save the setting, or continually press 'CANCEL' to abort without saving.

Learning non-standard ring / busy / disconnect cadences

This feature allows the 960 interconnect to adapt to the different cadences available on different telephone networks.

Dialling Menu
Learn Cadences

Select "Learn Cadences" option from the "Dialling Menu".

Learn Cadences
Learn Busy Tone

Select either "Learn Ring Tone", "Learn Busy Tone" or "Learn Disc. Tone" option.

Cadences. 01↓
Learn Busy Tone

Select a cadence. Press the 'UP' and 'DOWN' arrow keys to scroll through the numbers, or type in a number using the number keys. Up to 3 different cadences can be learned for each tone. Each cadence is allocated to a different cadence number. Press 'END' to accept.

Enter Ph. Number
94341630-----

Using the number pad enter in the phone number to be dialled to generate the appropriate cadence. Press 'END' to dial the phone number.

Press Key To
Commence

Once the correct cadence is heard through the front panel speaker, press any key to activate the learning process.

Hold Down Key To
Finish

Once an adequate number of cadences have been heard. (2 - 16 cadences), press any key to end the learning process. The learning process will automatically finish after 16 cadences, if no key is pressed.

Note; 'CANCEL' key can be used at any time to cancel the learning process.

Repeat for other cadence tones.

Alternatively, the user may enter the cadence manually. This procedure sets the various tone ON and OFF time. These must be known by the user to be entered into the 960.

Learn Cadences
Manual Set Tones

Enter the "Manual Set Tones" submenu in the "Learn Cadences" submenu.

Manual Set Tone
Busy Tone

Select "Ring Tone", "Busy Tone" or "Disc. Tone" by pressing the 'UP' and 'DOWN' arrow keys.

Cadences. 01↓
Busy Tone

Select a cadence, by pressing the 'UP' and 'DOWN' keys, or type in a value using the number keys. 'Maximum Cadence on Time' will be displayed.

Max on time (ms)
430_____

Press 'CANCEL' to delete a digit. Enter a new value using the number keys. Press the 'END' key to accept, or the 'CANCEL' key repeatedly to abort. When the 'END' key is pressed, the 'Minimum Cadence on Time' is displayed.

Min on time (ms)
320_____

Press 'CANCEL' to delete a digit. Enter a new value using the number keys. Press the 'END' key to accept, or the 'CANCEL' key repeatedly to abort. When the 'END' key is pressed, the 'Maximum Cadence off Time' is displayed. This is the maximum time it waits for a new cadence.

Off time (sec)
320_____

Press 'CANCEL' to delete a digit. Enter a new value in seconds. Press the 'END' key to accept, or the 'CANCEL' key repeatedly to abort.

Access levels

Each transceiver that calls into the interconnect has its own unique Selcall ID. Each Selcall ID is assigned an access privilege internally to the interconnect that determines the type of phone call that can be made through the interconnect, and the type of call it can receive (eg. Selcall or Telcall).

Setting Access from Transceiver to Phone

Access levels that exist from the transceiver to the phone are;

Preset

If set, only Selcalls can be received from these ID(s). A preset phone number (if set) will be dialled according to the least two significant values of the sent Selcall ID (ie. 1-98).

Preset/Local

If set, Selcalls and Telcalls can be received from these ID(s). A preset phone number (if set) will be dialled when a Selcall is received. Only local phone numbers received in a Telcall will be dialled. Toll free numbers will be allowed through. These are phone numbers with a prefix of 1800 or 008.

Preset/Local/STD

If set, Selcalls and Telcalls can be received from these ID(s). Local and long distance phone calls will be allowed through.

All Phone Calls

If set, Selcalls and Telcalls can be received from these ID(s). Every call received will be dialled.


Barred

If set, this selcall ID will not be able to make any phone calls through this system.




```
Access Menu
Set Phone Access
```

Select "Set Phone Access" option from the "Access Menu".



```
Start ID.1234
Set Phone Access
```

Use the number pad to enter in the Start ID to modify.



```
End ID.1234
Set Phone Access
```

Use the number pad to enter in the End ID. To edit one Selcall ID, set Start ID and End ID the same.



```
Phone Access
All Phone Calls
```

Use the 'UP' and 'DOWN' arrow keys to select the required access level. Press 'END' key to save. Available access levels will depend on the Option Level of the interconnect purchased (See System Option Levels).

Setting Access from Phone to Transceiver

Access levels that exist from the phone to the transceiver are;

Selcalls Only

If set, this Selcall ID can receive Selcalls only from the interconnect.

Selcalls and Telcalls

If set, this Selcall ID cannot receive all Selcalls and Telcalls.

Barred

If set, this Selcall ID will not be able to receive any Selcalls or Telcalls from the interconnect.

```
Access Menu
Set Txcvr Access
```

Select "Set Txcvr Access" option from the "Access Menu".

```
Start ID.1234
Set Txcvr Access
```

Use the number pad to enter in the Start ID to modify.

```
End ID.1234
Set Txcvr Access
```

Use the number pad to enter in the End ID. To edit one Selcall ID, set Start ID and End ID the same.

```
Txcvr Access
All Tel/Selcalls
```

Use the 'UP' and 'DOWN' arrow keys to select the required access level. Press 'END' key to save.

Viewing Access Level

```
Access Menu
Get Access Level
```

Select "Get Access Level" option from the "Access Menu".

```
ID.1234
Get Access Level
```

Use the number pad to enter in the Selcall ID to modify. Press 'END' to select.

All Phone Calls
All Tel/Selcalls

The access level from transceiver to phone will be displayed for 2 seconds on the top line of the LCD and the access from phone to transceiver will be displayed on the bottom line.

Telcall access parameters

Barred Prefix

This facilitates the ability to block certain phone number prefixes from being called via a Telcall.

Telcall Setup
Barred Prefixes

Select "Barred Prefixes" option from the "Telcall Setup" menu. This is located in the "Access Menu".

00↓
Barred Prefixes

Select the barred prefix to modify by using the 'UP' and 'DOWN' arrow keys to scroll between 0 and 9. Press 'END' to confirm which barred prefix to modify.

Enter Prefix
0011_____

If the barred prefix already exists it will be displayed upon the bottom line otherwise the LCD cursor will be positioned at the first number. The 'CANCEL' button will delete the last entered character, or cancel the operation all together if the barred phone number is blank. Press 'END' to save the barred phone number.

01↓
Barred Prefixes

Select another barred prefix to modify by using the 'UP' and 'DOWN' arrow keys. Press 'END' to confirm which barred prefix to modify, or press 'CANCEL' to exit.

Local Number Length

If the received Telcall phone number is this length, then it is assumed to be a local phone number.

Telcall Setup
Local Num Length

Select "Local Num Length" option from the "Telcall Setup" menu. This is located in the "Access Menu".

08↓
Local Num Length

Select the local number length by using the 'UP' and 'DOWN' arrow keys to scroll between 6 and 10. Press 'END' to save.

TollFree Prefixes

This sets prefixes that are recognised as TollFree phone number prefixes during a Telcall.

Telcall Setup
TollFree Prefixs

Select "TollFree Prefixs" option from the "Telcall Setup" menu. This is located in the "Access Menu".

00\$
TollFree Prefixs

Select the TollFree prefix to modify by using the 'UP' and 'DOWN' arrow keys to scroll between 0 and 4. Press 'END' to confirm which TollFree prefix to modify.

Enter Prefix
008-----

If the TollFree prefix already exists it will be displayed upon the bottom line otherwise the LCD cursor will be positioned at the first number. The 'CANCEL' button will delete the last entered character, or cancel the operation all together if the barred phone number is blank. Press 'END' to save the toll free prefix.

STD Prefixes

This sets which prefixes are recognised as STD phone number prefixes during a Telcall.

Telcall Setup
STD Prefixs

Select "STD Prefixes " option from the "Telcall Setup" menu. This is located in the "Access Menu".

00\$
STD Prefixs

Select the STD prefix to modify by using the 'UP' and 'DOWN' arrow keys to scroll between 0 and 9. Press 'END' to confirm which STD prefix to modify.

Enter Prefix
0-----

If the STD prefix already exists it will be displayed upon the bottom line otherwise the LCD cursor will be positioned at the first number. The 'CANCEL' button will delete the last entered character, or cancel the operation all together if the barred phone number is blank. Press 'END' to save the STD prefix.

Pre-recorded messages

Three pre-recorded messages can be stored internally to the interconnect. They are used to provide information to the users of the interconnect and can be up to 15 seconds long. The three messages are respectively;

“Welcome”. When someone calls into the interconnect from a phone line this message is played to the phone line. This also can be used to provide instructions on the use of the interconnect.

“No Dial Tone”. When a phone call is made by the interconnect, the presence of a dial tone is checked first (See Enabling Dial Tone Checking). If no dial tone is found then this message is transmitted to the transceiver.

“Access Denied”. When a user of the interconnect attempts to use a feature that they have not paid for, this message will be played.

Playing a Pre-Recorded Message

Voice Msg's Menu
Play Message

Select “Play Message” from the “Voice Msg's Menu”.

Select Voice Msg
Welcome

Select the message to play.

Playing
Welcome

The message will now be played to the interconnect's front speaker.

Recording a Message

Voice Msg's Menu
Record Message

Select “Record Message” from the “Voice Msg's Menu”.

Select Voice Msg
Welcome

Select the message to record.

Press PTT
Welcome

Using a microphone plugged into the front panel, press the PTT button to start recording the message.



Recording 14s
Welcome

An indicator of the time left in the message will be displayed on the LCD. Release the PTT button when the message is completed.

The message is not required to use the maximum length possible. Play back the message as explained above.

Erasing a Message



Voice Msg's Menu
Erase Message

Select "Erase Message" from the "Voice Msg's Menu".



Select Voice Msg
Welcome

Select the message to erase.



Erasing
Welcome


The message is now erased.

Operational parameters


Selecting Channel Scan on Power-up

Factory Default: On

The normal operation of the interconnect requires that a number of channel frequencies be scanned for incoming calls. The channels only programmed as "Scan" will be scanned (See 'Adding / Editing a Channel'). Enabling scan mode here will place the interconnect into scan mode and will also save this option.

A rectangular button with a black border and a light gray background. It contains the text "Operational Menu" on the top line and "Scan on PowerUP" on the bottom line, both in a black, monospaced font.

Select "Scan on Powerup" from the "Operational Menu".


A rectangular button with a black border and a light gray background. It contains the text "[On]/Off" on the top line and "Scan on PowerUP" on the bottom line, both in a black, monospaced font.

Use the 'LEFT' and 'RIGHT' arrow keys to select "On" or "Off". Press 'END' to confirm selection.

Selecting Automatic Mode on Power-up

Factory Default: Auto

The normal automatic operation of the interconnect means that any incoming phone calls will be automatically answered and any received Selcalls, Telcalls or beacons will be automatically processed.

A rectangular button with a black border and a light gray background. It contains the text "Operational Menu" on the top line and "Auto on PowerUP" on the bottom line, both in a black, monospaced font.

Select "Auto on Powerup" from the "Operational Menu".


A rectangular button with a black border and a light gray background. It contains the text "[Auto]/Manual" on the top line and "Auto on PowerUP" on the bottom line, both in a black, monospaced font.

Use 'LEFT' and 'RIGHT' arrow keys to select "Auto" or "Manual". Press 'END' to confirm selection.

Enabling Automatic VOX

Factory Default: Auto

'Automatic' VOX control removes the need for the telephone user to have to think about what is happening. Whenever they say something, the transceiver is automatically switched to transmit. Whenever they stop or pause for a while, it switches back to receive.

A rectangular button with a black border and a light gray background. It contains the text "Operational Menu" on the top line and "Automatic VOX" on the bottom line, both in a black, monospaced font.

Select "Automatic VOX" from the "Operational Menu".

[Auto]/Manual
Automatic VOX

Use the 'LEFT' and 'RIGHT' arrow keys to select "Auto" or "Manual". Press 'END' to confirm selection.

Setting VOX Hang-up Timeout Period

Factory Default: 4 minutes

This option will terminate a phone call if the person on the phone line has not spoken within this period. This is to assist with phone exchanges that do not generate a call progress tone when the phone is placed on-hook.

Operational Menu
VOX Timeout

Select "VOX Timeout" from the "Operational Menu".

04↓ Minute(s)
VOX Timeout

Use the 'UP' and 'DOWN' arrow keys to select the maximum time in minutes to wait for someone on the phone to speak. To disable the VOX timeout select "00 Minute(s)". The maximum time out is sixty minutes, the minimum is one minute. Press 'END' to confirm selection.

Setting Number of Busy Tones before Hangup

Factory Default: 5

This option will set the maximum number of busy cadences before the interconnect hangs up.

Operational Menu
Hangup Counts

Select "Hangup Counts" from the "Operational Menu".

05↓
Hangup Counts

Use the 'UP' and 'DOWN' arrow keys to select the maximum number of busy cadences. The maximum is ten, the minimum is one. Press 'END' to confirm selection.

Setting VOX Hang-time

Factory Default: 0.5 seconds

This option determines how long to leave VOX enabled after the person on the phone line has finished speaking. This helps to maintain a reliable PTT in between words or syllables.



Operational Menu
VOX Hangtime

Select "VOX Hangtime" from the "Operational Menu".



Select Hang time
0.5 second

Use the 'UP' and 'DOWN' arrow keys to select how long to leave VOX enabled after the person on the phone line has finished speaking. Press 'RIGHT' arrow to confirm selection.

Setting VOX Threshold

Factory Default: Sensitive

This option determines the minimum threshold level for automatic VOX, when a person speaks on the phone line. When this level is reached, then VOX is enabled.



Operational Menu
VOX Threshold

Select "VOX Threshold" from the "Operational Menu".




Select Threshold
Sensitive

Use the 'UP' and 'DOWN' arrow keys to select the minimum threshold for automatic VOX. Choices are; Sensitive, Normal, -3dB, and -6dB. Press 'END' key to confirm selection.

Setting Selcall Self ID


Factory Default: 45xx

This is the group Selcall ID owned by this unit. For example, the ID 45xx means that any Selcalls, Telcalls or beacons sent in the range 4500 to 4599 will be acknowledged by this interconnect.



Operational Menu
Selcall Self ID

Select "Selcall Self ID" from the "Operational Menu".



45xx
Selcall Self ID

Use the 'UP' and 'DOWN' arrow keys to select the ID. Press 'END' to confirm selection.

Enabling Periodic Beacon

Factory Default: 10 minutes

This option generates a beacon that will be sent on every programmed channel. The interval in minutes determines how often the beacon(s) will be sent.

Operational Menu
Periodic Beacon

Select "Periodic Beacon" from the "Operational Menu".

10↓ Minute(s)
Periodic Beacon

Use the 'UP' and 'DOWN' arrow keys to select the interval in minutes that the beacons will be sent. To disable the periodic beacon select "00 Minute(s)". The maximum beacon interval is sixty minutes, the minimum is one minute. Press 'END' to confirm selection.

Selecting the Charging Method

Factory Default: Time Charging

In addition to charging the client for the length of time on-line, a charge pulse can be setup to be sent from the Telephone exchange at a unit time interval as determined by the telephone exchange charging rates. A unit interval for example may be every 30 seconds for a long distant phone call. This is available to out going calls only.

The available pulse detection types are 50Hz, 12kHz and 16kHz. These may not be available in some countries. A combination is not possible.

Operational Menu
Charging Method

Select "Charging Method" from the "Operational Menu".

Charging
Time Charge

Use the 'UP' and 'DOWN' arrow keys to select the charging type. Press 'END' to confirm selection.

Enabling the Printer

Factory Default: Yes, Enabled

Enabling this will generate printed information out of the printer port.

Operational Menu
Printer Enable

Select "Printer Enable" from the "Operational Menu".

[Yes]/No
Printer Enable

Use 'LEFT' and 'RIGHT' arrow keys to select "Yes" or "No". Press 'END' to confirm selection.

Setting the Real Time Clock (RTC)

Operational Menu
Set Clock

Select "Set Clock" from the "Operational Menu".

24 May '00
15:25:00

Use the 'UP' and 'DOWN' arrow keys to select the day of the month. Optionally use the number keys to type in the day of the month. Press 'END' to move onto the next field.

Use the 'UP' and 'DOWN' arrow keys to select the month. Press 'END' to move onto the next field.

Use the 'UP' and 'DOWN' arrow keys to select the year, or use the number keys to type in the year. Single digit years(e.g. 01) must start with a zero. Press 'END' to move onto the next field.

Use the 'UP' and 'DOWN' arrow keys to select the hour of day (24 hour format). Press 'END' to move onto the next field.

Use the 'UP' and 'DOWN' arrow keys to select the minute of the hour. Press 'END' to save new date and time. (Seconds are set to zero).

Setting the Custom Start-up Message

A custom user start-up message can be displayed on power-up following the Barrett start-up message.

Operational Menu
Startup Message

To modify the startup message, select "Startup Message" from the "Operational Menu".

960 HF Telephone
Interconnect

Use the 'UP' and 'DOWN' arrow keys to scroll through the possible characters. Press 'END' to move onto the next character.

Repeat until both lines on LCD are done.

The final press of the 'END' key will save both lines to EEPROM. Pressing 'CANCEL' at any point will abort changes.

Enabling the Scrambler

Factory Default: No, Disabled

This option is used to enable/disable all scrambler ID's that are enabled in the "Set Scrambler ID" menu option. (See "Setting Scrambler ID for each User's Self Selcall ID").

Operational Menu
Scrambler Enable

Select "Scrambler Enable" from the "Operational Menu".

[Yes]/No
Scrambler Enable

Use the 'LEFT' and 'RIGHT' arrow keys to select "Yes" or "No". Press 'END' to confirm selection.

Setting Scrambler ID for each User's Self Selcall ID

Sets the scrambler ID, for each individual user Selcall ID. Also enables / disables scrambler for each Selcall ID.

Operational Menu
Set Scrambler ID

Select "Set Scrambler ID" from the "Operational Menu".

Selcall ID:1234
Set Scrambler ID

Enter a interconnect user's transceiver self Selcall ID using the number keys.

[Yes]/No
Enable Scrambler

Press the 'LEFT' and 'RIGHT' arrow keys to enable / disable scrambler for the current Selcall ID. Press 'END' to confirm selection.

00↑
Set Scrambler ID

Press the 'UP' and 'DOWN' arrow keys to select a Scrambler ID for the current Selcall ID. Press 'END' to accept and press 'CANCEL' to abort.

Setting RX Level when in PTT


Factory Default: Low

Sets the RX Level when the interconnect detects VOX, in duplex mode. Options are “High” and “Low”. When “Low” is selected, RX Level is reduced by 20dB. When “High” is selected, audio is received at full power.

A rectangular screen with a black border and a light gray background. The text "Operational Menu" is on the top line and "PTT RX Level" is on the bottom line, both in a black monospaced font.

Operational Menu
PTT RX Level

Select “PTT RX Level” from the “Operational Menu”.

A rectangular screen with a black border and a light gray background. The text "[Low]/High" is on the top line and "PTT RX Level" is on the bottom line, both in a black monospaced font.

[Low]/High
PTT RX Level

Use the ‘LEFT’ and ‘RIGHT’ arrow keys to select “Low” or “High”. Press ‘END’ to confirm selection.

Enabling Mute during Scanning

Factory Default: Off

Enables mute while scanning.

Note; Speaker will be unmuted while receiving Selcalls and while online.

A rectangular screen with a black border and a light gray background. The text "Operational Menu" is on the top line and "Scan Mute" is on the bottom line, both in a black monospaced font.

Operational Menu
Scan Mute

Select “Scan Mute” from the “Operational Menu”.

A rectangular screen with a black border and a light gray background. The text "[On]/Off" is on the top line and "Scan Mute" is on the bottom line, both in a black monospaced font.

[On]/Off
Scan Mute

Use the ‘LEFT’ and ‘RIGHT’ arrow keys to select “On” or “Off”. Press ‘END’ to confirm selection.

Factory options

The “Factory Menu” is located in the ‘Operational Menu’, and it is used to reset various parameters to their factory defaults.

Reset all to defaults

```
Factory Menu
Factory Rst All
```

Select “Factory Rst All” from the “Factory Menu”.

```
Reset? No/[Yes]
Factory Rst All
```

Use the ‘LEFT’ and ‘RIGHT’ arrow keys to select “Yes” or “No”. Press ‘END’ to confirm selection.

Reset operational only to defaults

Resets all operational parameters.

```
Factory Menu
Rst Operational
```

Select “Rst Operational” from the “Factory Menu”.

```
Reset? No/[Yes]
Rst Operational
```

Use ‘LEFT’ and ‘RIGHT’ arrow keys to select “Yes” or “No”. Press ‘END’ to confirm selection.

Reset Selcall access levels only to default

Sets all access privileges to the defaults. e.g. access barred.

```
Factory Menu
Rst Access Level
```

Select “Rst Access Level” from the “Factory Menu”.

```
Reset? No/[Yes]
Rst Access Level
```

Use ‘LEFT’ and ‘RIGHT’ arrow keys to select “Yes” or “No”. Press END to confirm selection.

Reset Call Progress Cadences to default

Resets cadences to defaults (e.g. Busy, Ring and Disconnect), which are Australian.

```
Factory Menu
Rst Cadences
```

Select "Rst Cadences" from the "Factory Menu".

```
Reset? No/[Yes]
Rst Cadences
```

Use 'LEFT' and 'RIGHT' arrow keys to select "Yes" or "No". Press END to confirm selection.

Erase all channels

```
Factory Menu
Erase Channels
```

Select "Erase Channels" from the "Factory Menu".

```
Reset? No/[Yes]
Erase Channels
```

Use 'LEFT' and 'RIGHT' arrow keys to select "Yes" or "No". Press 'END' to confirm selection.

Erase all preset phone numbers

```
Factory Menu
Erase Phone Num.
```

Select "Erase Phone Num." from the "Factory Menu".

```
Reset? No/[Yes]
Erase Phone Num.
```

Use 'LEFT' and 'RIGHT' arrow keys to select "Yes" or "No". Press 'END' to confirm selection.

Erase internal DataLog

```
Factory Menu
Erase Data Log
```

Select "Erase Data Log" from the "Factory Menu".

```
Reset? No/[Yes]
Erase Data Log
```

Use 'LEFT' and 'RIGHT' arrow keys to select "Yes" or "No". Press 'END' to confirm selection.

Getting DataLog % Full

This will display how full the internal DataLog is.

A rectangular box with a black border and a light gray gradient background. Inside, the text "Factory Menu" is on the first line and "% Data Log Full" is on the second line, both in a black monospaced font.

```
Factory Menu
% Data Log Full
```

Select "% Data Log Full" from the "Factory Menu".

A rectangular box with a black border and a light gray gradient background. Inside, the text "Factory Menu" is on the first line and "00.01%" is on the second line, both in a black monospaced font.

```
Factory Menu
00.01%
```

DataLog size is displayed as a percentage of total memory usage.

Enable configuration through PC serial port

This will enable using the Option Level 3 PC software through a NULL modem serial cable to configure the interconnect.

A rectangular box with a black border and a light gray gradient background. Inside, the text "Factory Menu" is on the first line and "(RS-232) Program" is on the second line, both in a black monospaced font.

```
Factory Menu
(RS-232) Program
```

Select "(RS-232) Program" from the "Factory Menu".

A rectangular box with a black border and a light gray gradient background. Inside, the text "Computer Control" is displayed in a black monospaced font.

```
Computer Control
```

The interconnect will now be placed in permanent computer control. Use the Option Level 3 software to talk to the interconnect. To restart the interconnect turn the unit off and on.

ALE Configuration

Enabling/Disabling the ALE

```
ALE Menu
ALE Enable
```

To enable the ALE go to the "ALE Menu" and use the 'UP' and 'DOWN' arrow keys to choose the "ALE Enable" menu option.

```
[Yes]/No
ALE Enable
```

Press 'END' to save the option.

ALE Fill Mode

ALE fill mode is used to remotely configure the ALE board via the Windows ALE configuration software.

```
ALE Menu
ALE Fill Mode
```

To go into ALE fill mode, go to the "ALE Menu" and use the 'UP' and 'DOWN' arrow keys to choose "ALE Fill Mode" menu option.

```
ALE Fill Mode
Cancel = Exit
```

To exit ALE fill mode, press the 'CANCEL' key.

Preset ALE Phone Numbers

For each ALE source address there is a corresponding preset phone number. These numbers are allocated according to source address index ID's.

```
ALE Menu
ALE Ph Numbers
```


To enter a preset ALE phone number, go to the "ALE Ph Numbers" menu option in the "ALE Menu".

```
00$
ALE Ph Numbers
```

Press the 'UP' and 'DOWN' arrow keys to choose a source address index. Then press the 'RIGHT' arrow key to start editing the phone number.

```
Enter Ph. Number
56784213_____
```


Enter the phone number through the key pad. When finished, press 'END' to save the current phone number and to go onto the next index.



01\$
ALE Ph Numbers

Press 'CANCEL' to exit out of the ALE phone number editor, or 'RIGHT' arrow key to edit the next ALE phone number.

ALE Self ID

Factory Default: 0

This is the index of the 'Self ID' memory in which the desired 'FROM' address resides. This is used for transmitting an ALE call from the telephone keypad, using the '*<dest ID>##' format, while online. <dest ID> is the index of the 'Other ID' memory in which the desired 'TO' address resides. See the "Embedded FED-STD-1045 ALE Card User's Manual" for details.



ALE Menu
ALE Self ID

To set the ALE Self ID, go to the "ALE Self ID" menu option in the "ALE Menu".



00\$
ALE Self ID

Press the 'UP' and 'DOWN' arrow keys to choose a source address index. Press the 'END' key to save the option. Press 'CANCEL' to exit without saving.

Remote supervisory software

Program Overview

The purpose of this software is to communicate with a remote interconnect with the ability to examine and/or alter its operational parameters, as well as download its call history log. See Interconnect Parameters.

Installation

Insert Setup disk 1 into floppy drive A:

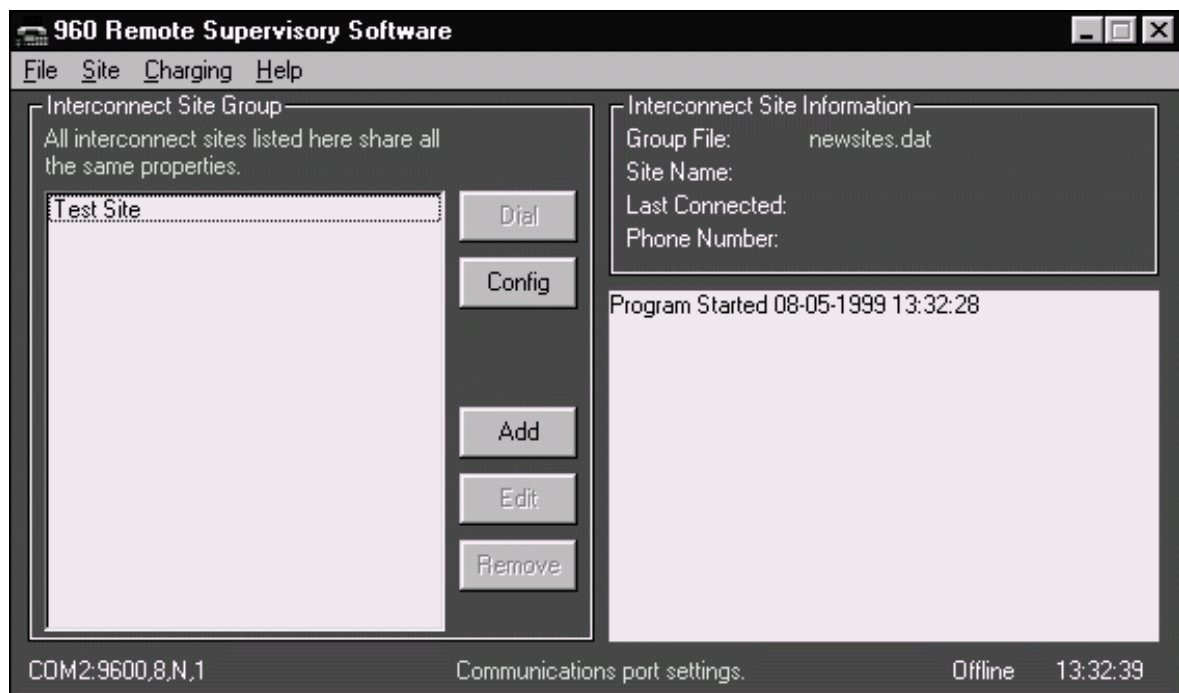
Go to the Start button on the task bar (Windows 95), and click on the Run.. Command.

Find the file Setup.exe and double click on it.

Follow the on-screen prompts to install the software.

Main Screen

When the user initially starts the program, the main user screen is displayed. The screen is used to allocated clients to a group file.



At the left of the main screen, is the list of interconnect sites. Select a site from the list to edit or download operational parameters. The current selected site's details are displayed in the site information box to the right. Sites can be added, edited and removed with the add, edit and remove button respectively.

Note that once the modem is connected to a remote interconnect, the site cannot be changed, until the connection has been terminated.

The lower right list shows a log of program activity. A mirror of this is saved to "win960.log".

Press the dial button to connect to an interconnect remotely. Note; modem parameters must be configured first.

The config button allows configuration of interconnect parameters on or off-line. Any of the interconnect parameters can be printed, uploaded or downloaded from here.

Whilst connected the dial button changes to a hangup button. Pressing the hangup button terminates the current connection.

Menu Options

Creating a New Group File

Opens a new group file. A group file contains all the sites, and a shared interconnect configuration. All the sites in the current group file share the same configuration parameters. To create a new interconnect configuration, create a new group file. To create a new group file, go to the "New Group" option in the "File" menu.

Opening an Existing Group...

To open an existing group file, go to the "Open Group..." option in the "File" menu. A standard file dialog box will be displayed. Enter a file name, and press OK. The new group file is opened for editing.

Copying a Group File's Parameters

To Copy the 960 configuration parameters between the current group file, and a new group file, or existing group file, go to the "File" menu and choose the "Copy Group" menu option. The new file dialog box is displayed. Enter a file name, and press OK. The new group file is opened immediately after creation.

Setting Configuration Options

Sets the current serial port, modem parameters, and printer. These options are shared across all the site group files. To access configuration options, go to the "Setup Port" option in the "File" menu.

Exit Program

All current options will be saved to disk. Go to the "File" menu and choose the "Exit" menu option.

Downloading All Interconnect Parameters

Open the appropriate Group File using the "Open Group..." option in the "File" menu. Select a Site from the sites list. Connect to the Site using the Dial button. To download all the parameters, go to the "Site" menu and select the "Download" menu option. A status bar will be displayed showing progress, and it will indicate which group of parameters are being downloaded. Once it is finished, press Config to edit the parameters.

Uploading All Interconnect Parameters

To upload the current interconnect parameters, select the current site in the current group file. Go to the "Site" menu and select the "Upload" menu option. A status bar will be displayed, and it will indicate which group of parameters are being uploaded.

Charging Setup

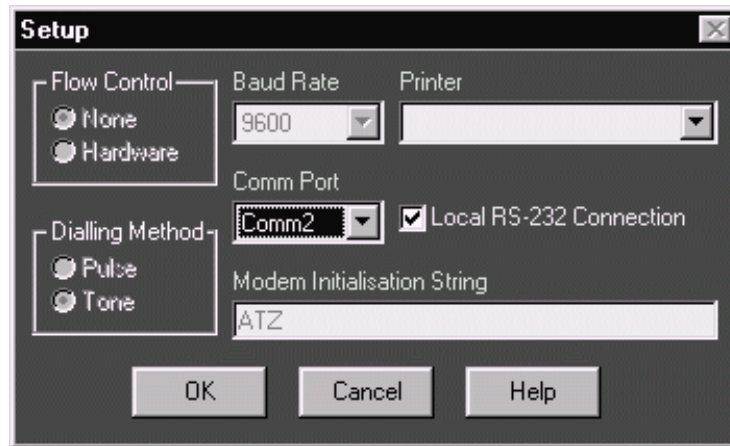
Sets the charging rates for both local calls and long distance calls. (\$/minute or \$/call). These are used for creating invoices for customers. Also, sets extra options for creating invoices. e.g. The text viewer used to view the invoice file, and the invoice directory. To access charging options, go to the "Charging Setup" option in the "Charging" menu. See the "Charging Setup" section.

Client Administrator

Used to generate invoices for customers. Allows the user to add new clients to the client database and allocate certain selcall ID's to a client. To run the client administrator, go to the "Client Administrator" option in the "Charging" menu. See the "Client Administrator" section.

Setup Window

The setup port window is accessed by going to the "File" menu and choosing the "Setup Port" menu option.



Baud Rate

This is the rate at which data is sent and received from the communications port. For newer high speed modems, this should be set to 19200. For older 1200/2400 modems, this has to be set at the connect speed.

Communication Port

This is the serial port where the modem is connected to. Usually COM1 or COM2, depending on where mouse is connected.

Flow Control

When communicating to modems at speeds greater than 9600 bps, it is recommended that hardware flow control be used to prevent data loss.

Dialling Method

Tone/Pulse depends on what your telephone exchange supports. Tone dialling is much quicker.

Modem Initialisation String

The modem initialisation string is used to configure the modem, before dialling out. For a normal modem ("AT" compatible command set) this is usually "ATZ". This will fetch the last saved modem settings. Consult your modem reference manual for modem settings.

Printer

Selects the windows printer device to print to.

Local RS-232 Connection

Checking this box will allow the interconnect to communicate directly with a PC through a NULL modem cable. This allows quick configuration of the interconnect "on the bench". Communications will be set to a default of 9600 baud, 8 data bits, 1 stop bit and no flow control.

Adding Interconnect Sites

Each site has associated with it a name, phone number, pin number, and a number of user selectable automatic events. The automatic events allows one to automatically upload any parameter settings of the interconnect and download the call history without user intervention.

The image shows a 'Calling Configuration' dialog box with two tabs: 'Site' and 'Auto Events'. The 'Site' tab is active. Inside the dialog, there is a section titled 'Interconnect Site Calling Configuration' containing four input fields: 'Site Name' with the value 'Test Site', 'Phone Number' with the value '1234 5678', 'Pin' with the value 'xxxx', and 'Default Packs' with a dropdown menu showing '<Empty>'. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

To add a site, press the Add button on the main window. To edit an existing site, press the Edit button on the main window, after selecting a client to edit from the client list on the left. The following options are displayed;

Site Name

The name of the interconnect site in the current group. All sites in a group file share the same interconnect parameters. To create a different configuration, go to the File menu and select the New Group menu option.

Phone Number

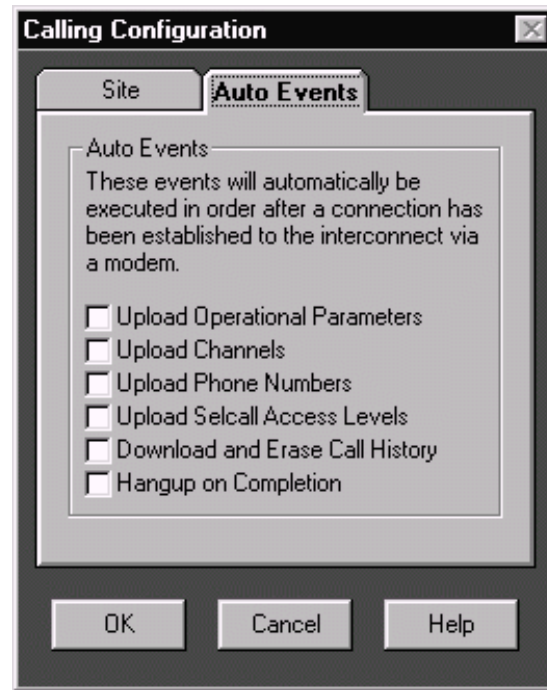
The phone number used to dial to a remote interconnect. Local RS-232 Connection must be disabled in the Setup Port Window.

Pin Number

The pin number is a unique number assigned to each interconnect which allows remote access via modem.

Default Packs

Selects a standard interconnect configuration for this group of sites. Note; All sites in the current group file share the same configuration parameters. Therefore, when a new default pack is selected, it will overwrite the configuration for all sites.



Upload Operational Parameters

The interconnect operational parameters contained within the file will be uploaded as soon as a connection is seen.

Upload Channels

The interconnect channels contained within the file will be uploaded as soon as a connection is seen.

Upload Phone Numbers

The interconnect preset phone numbers contained within the file will be uploaded as soon as a connection is seen.

Upload Selcall Access Levels

If the site image file is valid, the interconnect selcall access levels contained within the file will be uploaded as soon as a connection is seen.

Download and Erase Call History

The interconnect call history will be downloaded, processed and placed in the database as soon as a connection is seen.

Hang-up on Completion

On completion of all the above auto events, if this is enabled, the modem will hang-up.

Dialling

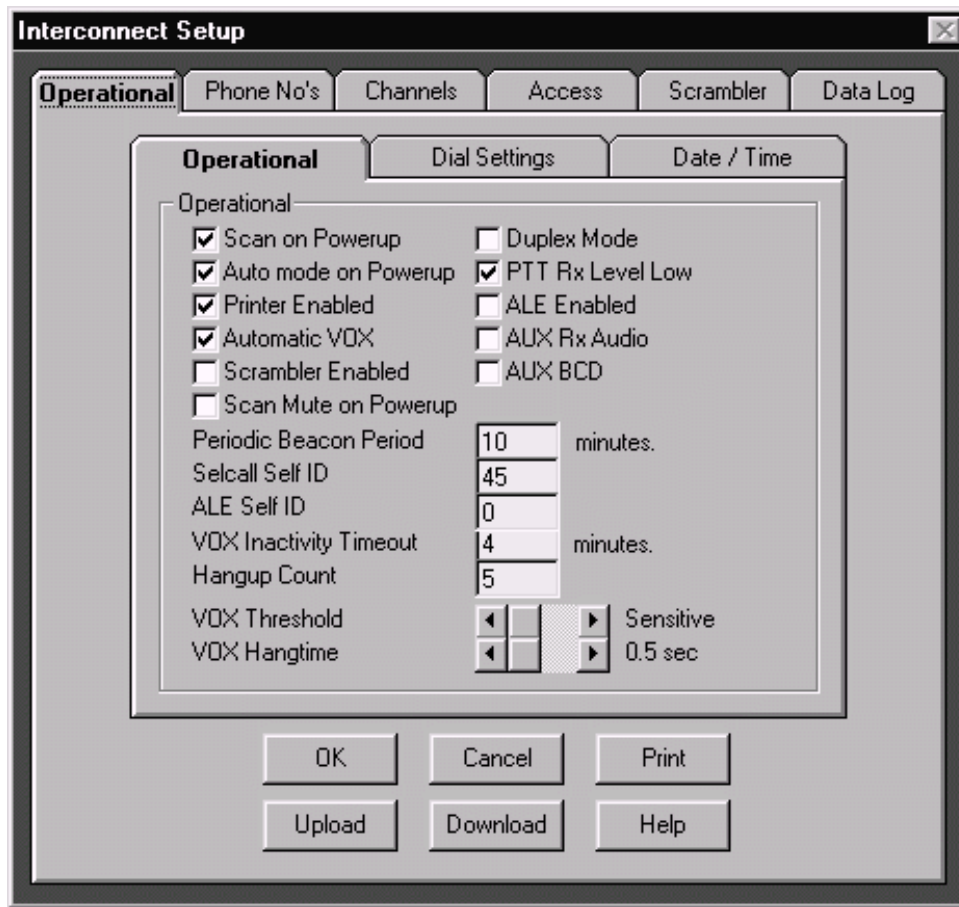
Once a site has been selected from the sites list, hit the dial button. This will invoke a form that will initialise the modem and then start dialling the site's phone number. Any dialling errors like 'no dial tone' or 'modem not responding' will be reported.

Once the interconnect has answered the phone call, it will start playing its custom voice message. Once this message is complete, hit the connect button which will switch both modems into data mode. Alternatively this will automatically be done after 30 seconds, removing any need for user intervention.

When a modem carrier is detected the dialling form will be closed, and any automatic events will be initiated. The status of these auto events will be displayed in the program log. If 'hang-up' on auto completion is selected then the modem will hang-up, otherwise the software will be left in an interactive (on-line) state, allowing the user to do whatever they wish on-line.

Modifying the Interconnect's Parameters

The parameters for the interconnect can be modified on or off-line. To modify the interconnect's parameters, select the interconnect site to modify and press the Config button.



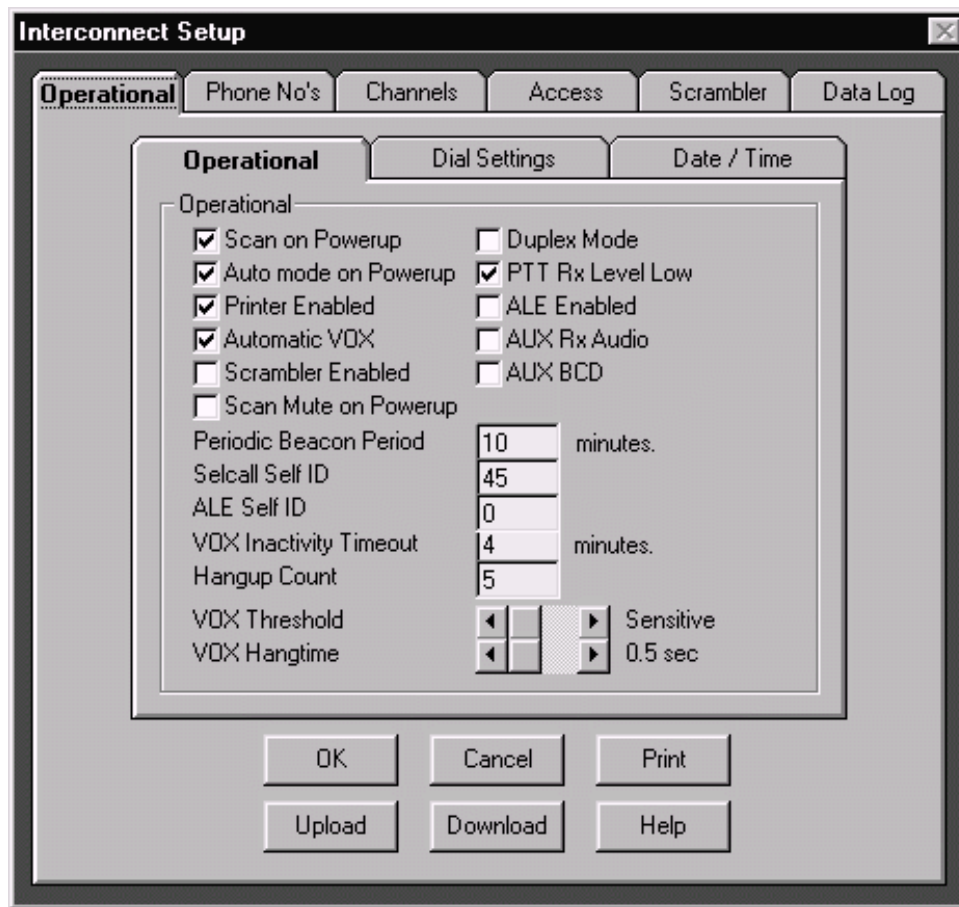
The first step is to download the current interconnect parameters. To download the interconnect parameters, select the tab containing the parameters to be downloaded, and press the download button.

Note; Only the parameters that are currently displayed will be downloaded. (e.g. operational, access, channels...). These will only be saved to the site's disk image file. Press cancel to abort any changes

The upload button is used to send the current configuration to the 960 interconnect. A transfer progress screen will be displayed when uploading.

The print button will print the currently displayed parameters to the selected printer. The help button will display the help file.

Operational Parameters



This panel displays the operational parameters of the remote interconnect. These are general settings that affect the operational state of the interconnect.

Operational Settings

To access the operational settings, press the Config button on the main window. Go to the operational tab and select operational parameters.

Version (Read Only)

This displays the software version of the remote interconnect.

Scan on Powerup

When checked, the interconnect will jump into scan mode when started, allowing multiple frequencies to be monitored.

Auto Mode on Powerup

When checked, the interconnect will jump into automatic response mode to received selcalls, telcalls and phone calls.

Printer Enabled

When checked, the printer (if connected) on the remote interconnect will print out event information. Eg. phone call received, phone call made etc...

Automatic VOX

The VOX allows automatic detection of when the person on the phone is speaking. This in turn is used to activate PTT (Press to Transmit) on the connected transceiver, hence allowing the voice from the phone to be transmitted to air. When checked, this allows automatic detection of voice and activation of PTT.

Scrambler Enabled

When checked, the scrambler is enabled on the remote interconnect.

Scan Mute on Powerup

This option enables Scan Mute, which disables the speaker during scan. The speaker is re-enabled during receiving Selcalls, and while the interconnect is online.

Periodic Beacon Period

The remote interconnect when off-line has the ability to send out a beacon on all available scannable channels to indicate that there is an interconnect out there. The time is measured in minutes. A zero in this field disables the periodic beacon.

Selcall Self ID

This is the self ID of the interconnect. The ID is the two most significant digits of a normal selcall ID. (e.g. 45xx) All selcalls, telcalls (e.g. 4512) and beacon calls (e.g. 4599) on air with this ID will be acknowledged by the interconnect.

ALE Self ID

Index to 'FROM' Address, used when sending ALE calls from the phone line.

VOX Inactivity Timeout

This is the maximum time that the remote interconnect will wait for the person on the phone to speak before the call is terminated. The time is measured in minutes. A zero in this field disables the VOX inactivity timeout.

Hangup Count

This sets the number of busy tones before hangup, while the interconnect is online. The hangup count may need to be varied for some countries, which have longer busy tones. (e.g 4 to 5 seconds, instead of 0.5 to 1 second between busy tones.)

VOX Threshold

This option determines the minimum threshold level for automatic VOX, when a person speaks on the phone line. The options are Sensitive, Normal, -3dB, and -6dB.

VOX Hangtime

This option determines how long to leave VOX enabled after the person on the phone line has finished speaking. The time is measured in seconds.

Duplex Mode

When checked, the duplex mode is enabled on the remote interconnect.

PTT Rx Level Low

Selects Low level for RX when interconnect detects VOX, in duplex mode. When unchecked, transceiver RX is received at full power.

ALE Enabled

When checked, the ALE is enabled on the remote interconnect.

AUX Rx Audio

When checked, the Auxiliary input is selected as the current transceiver source. Deselect this option to select the 950 input as the current transceiver source.

AUX BCD

When checked, the 974 (Aux) transceiver is selected as the source transceiver type. Deselect this option to select the 950 transceiver as the source transceiver type.

Dial Settings

To access the Dial Settings, go to the Operational tab and select Dial Settings.

Tone Dialling

When checked, tone dialling will be used for outgoing phone calls, otherwise pulse dialling will be used.

Dial Tone Wait

This is the period to wait for before determining if a dial tone is present. The time is measured in seconds. A zero in this field disables dial tone checking.

DTMF Tone Length

This is the length of one DTMF tone. This is only effective when tone dialling is selected. The time is measured in milli-seconds.

PABX Prefix

When this is selected, a set prefix is inserted before all outgoing calls. This may be used in some PABX phone systems to obtain an outside line. This prefix may be set in the text box following the PABX prefix option.

Line Reversal Detection

When checked, line reversal detection is enabled. Line reversal detection is a means of detecting when someone answered the phone when an outgoing phone call is made.

Wait for Ring

This sets the amount of time to wait for the first ring, when dialling out. Time is in seconds.

Wait for Answer

This sets the maximum amount of time to wait the user to answer the phone, when dialling out. Time is in seconds.

Rings Till Answer

This sets the number of rings required before the interconnect will answer the phone. A zero in this field disables the interconnect from answering the phone.

Rings Till Hang-up

This sets the number of rings to wait for when making a phone call before deciding that no one has answered.

Call Length

This is the maximum time online before the interconnect hangs up the phone.

Call Charging

This utilises a new method of monitoring the cost of the call in progress. If your exchange has enabled either the 50Hz, 12kHz or 16kHz subscriber charge pulses on your phone line then charging can additionally be made according to the number of charge units received. Selecting the corresponding field will enable monitoring for it. 'Time' will select time charging. See the main section "Call Charging" in this manual.

Operational - Date/Time

To access the Date/Time parameters, go to Date/Time in the Operational tab.

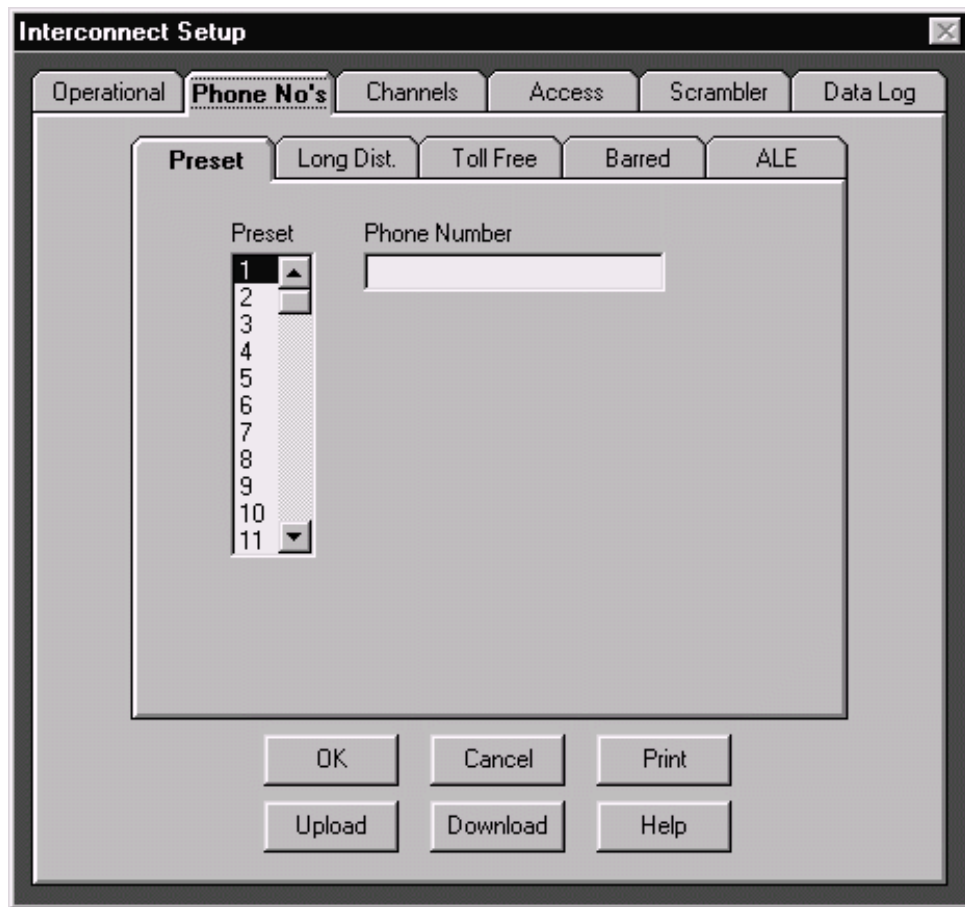
Date/Time

Allows changing the date and time of the remote interconnect when 'Change Data/Time' check box is checked.

Startup Message

This displays the LCD (Liquid Crystal Display) user defined startup message when the interconnect is turned on.

Setting Preset Phone Numbers/Prefixes



Preset Numbers

To set preset numbers, go to Preset phone numbers in the Phone No's tab. This panel displays preset phone numbers internal to the remote interconnect that are dialed when a Selcall is received. The maximum phone number length is 16 digits. There 98 preset phone numbers. Select the phone number index from the "Preset" list. Enter a phone number for this index.

Long Distance

To set long distance prefixes, go to the long distance prefixes in the Phone No's tab. This panel displays the long distance phone number prefixes. The default is '0'. i.e. Any number beginning with '0' will be classed long distance. Select the prefix index from the "Prefix No" list. Enter a prefix for this index.

Toll Free

To set toll free prefixes, go to the toll free prefixes in the Phone No's tab. This panel displays the toll free phone number prefixes. The default is '008' and '1800'. i.e. Any number beginning with '008' or '1800' will be classed as free. This is globally effective to all users. Select the prefix index from the "Prefix No" list. Enter a prefix for this index.

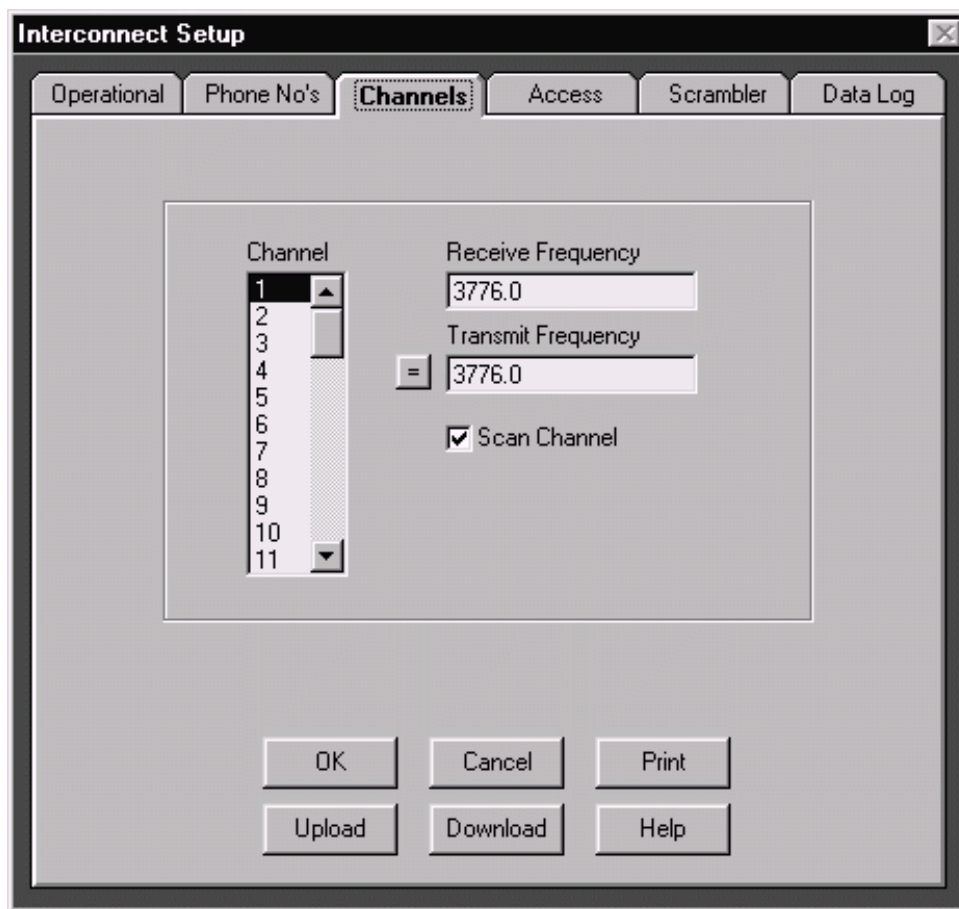
Barred

To set barred prefixes, go to the barred prefixes in the Phone No's tab. This panel display's the barred phone number prefixes. The default is '0011' and '0015'. i.e. Any number beginning with '0011' or '0015' will be barred. This globally effective to all users. Select the prefix index from the "Prefix No" list. Enter a prefix for this index.

ALE Numbers

To set ALE numbers, go to the ALE numbers in the Phone No's tab. This panel display's preset phone numbers internal to the remote interconnect that are dialed when a standard ALE call is received. The maximum phone number length is 16 digits. There 100 ALE phone numbers. Select the ALE phone number index from the "ALE" list. Enter a phone number.

Programming Channels

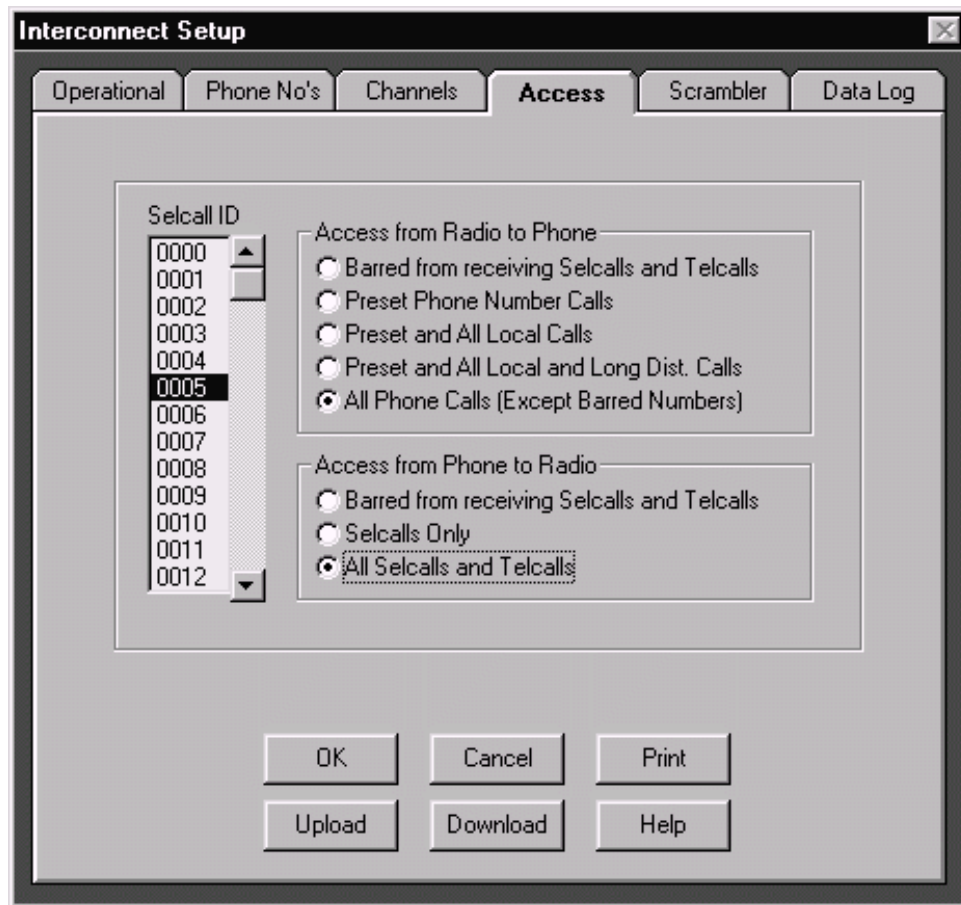


This panel is accessed by going to the Channels tab.

This panel displays the preset channel frequencies for the remote interconnect. To set a channel, choose a channel from the channel list. Receive frequency and transmit frequency are displayed for the current channel. The frequencies are measured in kilo Hertz (kHz). When Scan Channel is checked, the current channel will be scanned when the interconnect is in scan mode.

Selcall Access Levels

Each radio that calls into the interconnect has its own unique Selcall ID. Each selcall ID is assigned an access privilege that determines the type of phone call that can be made through the interconnect, and the type of call it can receive (e.g. Selcall or Telcall).



To modify access levels, select a selcall ID from the ID list. The current access levels are shown on the right. Select Access from Radio to Phone from the available options. This is the access to the phone for the transceiver user. Select Access from Phone to Radio from the available options.

The following access options are presented to the user;

Access from Radio to Phone

Preset Phone Number Calls

If set, only selcalls can be received from these ID(s). A preset phone number (if set) will be dialled according to the least two significant digits of the sent selcall ID (i.e. 1-98).

Preset and all Local Calls

If set, selcalls and telcalls can be received from these ID(s). A preset phone number (if set) will be dialled when a selcall is received. Only local phone numbers received in a telcall will be dialled. Toll free numbers will be allowed through (See Telcall Setup).

Preset and all Local and Long Dist. Calls

If set, selcalls and telcalls can be received from these ID(s). Local and long distance phone calls will be allowed through. (See Telcall Setup)

All Phone Calls (Except Barred Numbers)

If set, selcalls and telcalls can be received from these ID(s). Every call received will be dialled, except barred numbers.

Barred from receiving Selcalls and Telcalls

If set, this selcall ID will not be able to make any phone calls through this system.

Access from Phone to Radio**Selcalls Only**

If set, this selcall ID can receive selcalls only from the interconnect.

All Selcalls and Telcalls

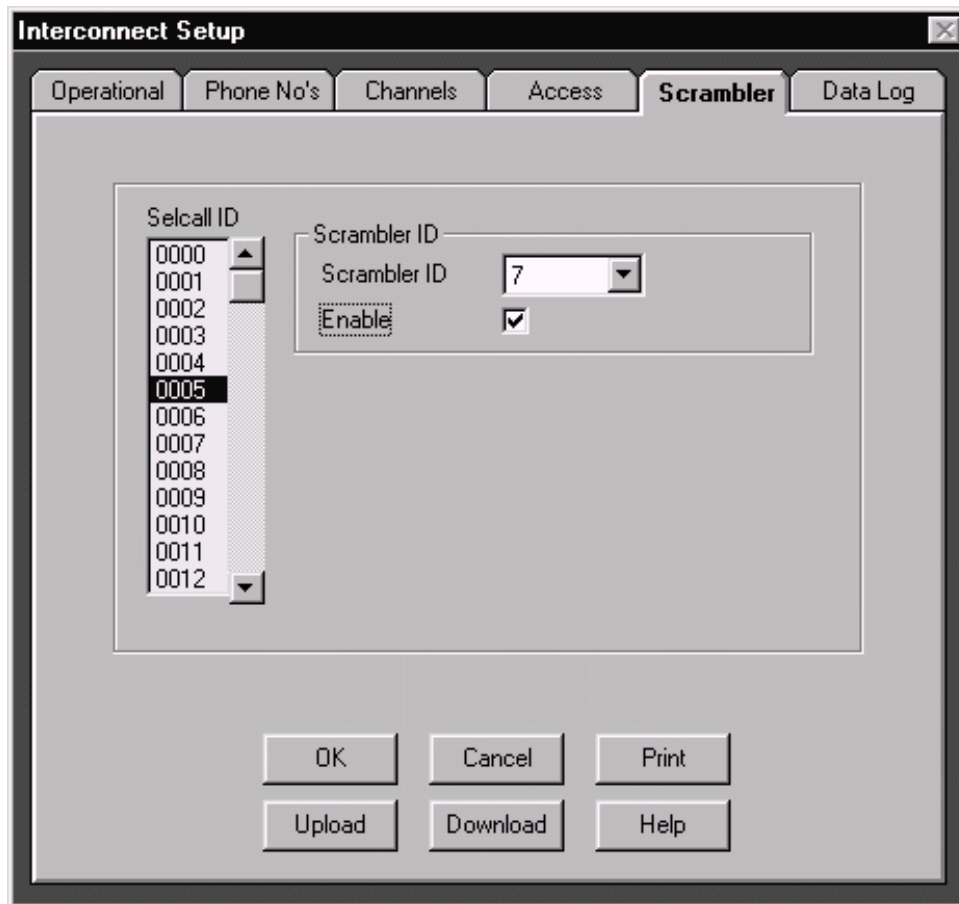
If set, this selcall ID can receive all selcalls and telcalls.

Barred from receiving Selcalls and Telcalls

If set, this selcall ID will not be able to receive any selcalls or telcalls from the interconnect.

Scrambler ID's

Each transceiver that calls into the interconnect has its own unique Selcall ID. Each Selcall ID has a corresponding scrambler ID, and an option to enable or disable the scrambler for each Selcall ID. There is also an option to enable or disable the scrambler for all scrambler ID's. (See Operational Parameters section).



To set the scrambler ID's;

- 1) Select the selcall ID to modify.
- 2) Select the scrambler ID from the listbox on the right.
- 3) Check the Enable option to enable the scrambler for the selected selcall ID.

Data Log (Option Level 2&3 Interconnects Only)

This panel displays the current state of the internal data log of the remote interconnect.



Shown at the top of the screen is the percentage of memory used by the datalog in the interconnect. When this becomes full, press the Erase button. Press the Refresh % button to update the percentage display.

To download the internal data log, press the download button. After the datalog is downloaded, it is processed and added to the datalog database. The datalog is used by the call charging component as a record of all transactions on the interconnect. (e.g. connect time, disconnect time, etc.)

Call Charging

Introduction

The remote supervisory software may be used to produce a bill for customers.

Setting Charging Rates

Charging Options

Charging Rates

Local Phone Calls: 0.5 (\$x.xx)

Long Distance: 0.5 (\$x.xx)

Local Call Length: 8

☐ Use charge pulse scheme if available.

Charge Pulse: 0.5 (\$x.xx)

Selcalls: 0.5 (\$x.xx)

Telcalls: 0.5 (\$x.xx)

ALE Calls: 0.5 (\$x.xx)

Phone Rate: ☒ \$ / Minute ☐ \$ / Call

Selcall Rate: ☒ \$ / Minute ☐ \$ / Call

Don't charge for call lengths shorter than: 0 Sec

Invoice Options

☒ View Invoice with: notepad.exe

☐ Print invoice once generated.

Invoice Directory: invoice\

Close Cancel

Before producing a bill, the charging rates must be set. Calls can be charged according to whether the incoming phone call produced a Selcall, Telcall, or ALE Call to link to the remote transceiver. These can be set by going to "Charging Setup" in the "Charging" menu and typing in a new rate for "Selcalls", "Telcalls" and "ALE Calls" (in dollars).

If the call was invoked by an incoming Selcall, Telcall, or ALE call, then calls can be charged according to the type of phone call made by the transceiver user. (e.g. local, STD, toll free, etc). Go to "Charging Setup" in the "Charging" menu and type in a new rate for "Local Phone Calls" and "Long Distance" (in dollars).

Using Time Charging

To enable time charging, time charging must be enabled on the 960 interconnect. See "Call Charging" in "Dial Settings". Then go to the "Charging Setup" in the "Charging" menu. Select "\$ / Minute" in the "Phone Rate" option and "Selcall Rate" option.

Using Charge Pulse Scheme

In some areas charge pulses can be used to calculate charging rates. To enable the charge pulse scheme, go to "Charging Setup" in the "Charging" menu. Select the "Use charge pulse scheme if available" option. Set the "Charge Pulse" rate (in dollars). Also pulse charging must be set in the 960 interconnect configuration. See "Call Charging" in "Dial Settings".

Invoice Options

Invoice options are used to determine how the bill will be produced.

Optionally, the produced invoice can be viewed by a Windows text editor. The default editor is notepad. To modify, go to "Charging Setup" in the "Charging" menu. Select the "View invoice with" check box. Enter a name for the executable of the program used to open the invoice file.

Even though it is possible to use notepad to print the invoice file, it is better to use the built in printer option to print the invoice. Select "Print invoice once generated" to send the invoice to the default printer, which is selected by going to the printer option in the "Port Setup" window.

Once the invoice is produced, it is stored in a text file in the directory of your choice. To modify, go to "Charging Setup" in the "Charging" menu. Go to the "Invoice Directory" option. Enter a new directory.

Adding/Editing Clients

Each invoice has a client name at the top. This client name must be entered prior to generating an invoice. Associated with each client, is a list of selcall ID's that are reserved for this client. Once a selcall ID is allocated, it can't be allocated to any other client.

To add a new client, go to "Client Administrator" in the "Charging" menu. Press the "Add" button to invoke the client editor.

Enter a "Client Name". This is the name of the company providing the interconnect service to it's customers. Optionally, enter a contact phone number, fax number, and address. These will be shown at the top of the generated invoice. Any comments entered, will be displayed on the invoice as well.

To add selcall ID's to this client, select the selcall ID from the "Unallocated Selcall ID's" list, and press the "+" button. To remove selcall ID's, select the selcall ID from the "Owned Selcall ID's" list, and press the "-" button.

Once finished press the OK button to save the client to the database, or press Cancel to abort.

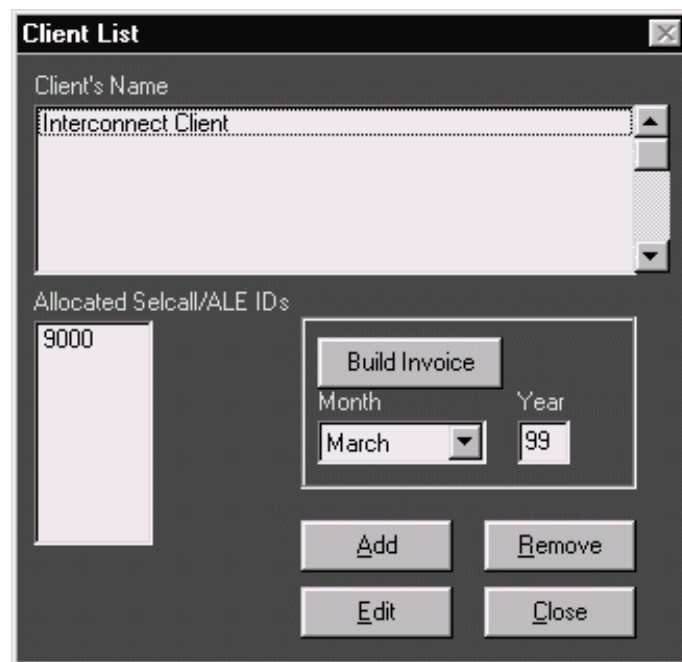
To edit an existing client, select the client from the "Client's Name" list in the Client Administrator. Press the "Edit" button. The existing client options will be displayed. Modify and then press the "OK" button to save to the database.

To remove an existing client from the client database, press the "Remove" button in the Client Administrator. All selcall ID's allocated to that client will also be removed.

Building Invoices

Choosing a Client

Open the Client Administrator by going to the "Client Administrator" submenu in the "Charging" menu.



Select a client from the clients list. To select multiple clients, hold down the 'CTRL' key and select another client. See Creating New Clients.

Choosing a Selcall ID

Alternatively, choose a Selcall ID from the list of allocated selcall ID's. These Selcall ID's were allocated to a particular client when the client was created. See Creating New Clients

Month/Year Field

















Next, select the month and year that the invoice will cover

Build Invoice Button

To build the invoice file, press the Build Invoice button. A new invoice will be created and placed in the directory set in the Charging Setup Window. If selected, the invoice will also be displayed in the text editor set in the Charging Setup Window. To print the invoice, select the Print invoice once generated option in the Invoice Options section, in the Charging Setup Window.

APPENDIX - A

Primary Screen/ Menu Key Functions

Key	Primary Screen Function	Menu Function
	Enter the main menu	Saves parameter
	Auto / Manual mode	Enters the digit '0'
	Scan / No Scan	Aborts parameter
	Changes channels Numeric key '1'	Enters the digit '1'
	Changes channels Numeric key '2'	Enters the digit '2'
	Changes channels Numeric key '3'	Enters the digit '3'
	Change channels Numeric key '4'	Enters the digit '4'
	Change channels Numeric key '5'	Enters the digit '5'
	Change channels Numeric key '6'	Enters the digit '6'
	Change channels Numeric key '7'	Enters the digit '7'
	Change channels Numeric key '8'	Enters the digit '8'
	Change channels Numeric key '9'	Enters the digit '9'
	Enters the Manual Menu	None
	Enables / Disables Mute	Enter sub-menu
	Changes channels (increment)	Scroll menu options (Up)
	Changes channels (decrement)	Scroll menu options (Down)